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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

In all States

Meat Produced in '49 Expected to Total About Same as Last Year

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Prospects for hog production and slaughter indicate that total U. S. meat production in '49 may be about the same as that of last year, says (Extension Official) in referring to the current situation report just released (Jan. 14) by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

"More pork in '49 may be just about offset by less beef and lamb," it is pointed out. "But more of the better grades, as cattle feeding-- source of the better beef -- promises to be larger this winter than it was last year."

The fall pig crop of about 34 million pigs turned out to be the largest since 1945; and an indicated crop this spring of 56.5 million pigs would be the largest spring crop since 1943 and the third largest on record. This promising spring crop is based on farmers' farrowing plans as reported to the Bureau of Agricultural Economics, counting on an average number of pigs per litter.

Both the fall pig crop and spring intentions come close to Department of Agriculture goals. Fall crop is up 8 percent from last year. The goal called for a 10 percent gain. The spring goal calls for a 17 percent increase over last year. If litters are average, indicated farrowings would yield a 10 percent increase - 6 percent under the goal. Based on the past uptrend in size of litters, there is a good chance litters will exceed average and that the goal will more nearly be reached.

Biggest increase in intended number of sows to farrow is found in the North Central States with an average increase of 17 percent. Average increases in other regions are: North Atlantic, 8 percent; South Atlantic, no change; South Central, 6 percent; and Western, 7 percent.

Reductions likely this year in the output of beef, veal, lamb and mutton are due to the gradual decrease in size of cattle and sheep herds that has been taking place over the last several years. If more cattle are held back in '49 to maintain herds, slaughter will be reduced considerably, it is pointed out.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO
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United States Department of Agriculture

In Iowa, Illinois, Nebraska,
Indiana, Ohio, Wisconsin,
Minnesota, Michigan, New
York, and North and South
Dakota

HANDLING OLD CRIB CORN

Spring inspection of cribbed corn is a precaution farmers can not afford to neglect, according to Extension Service workers. As the weather warms up, corn that has kept well during the cold weather may be found to have moisture enough to rot or mold. Snow may have drifted into slatted cribs; roof leaks may have caused moist pockets; or heating may have started in spots where accumulations of trash or shelled corn have choked off good ventilation of the cribbed corn or where the corn was originally too high in moisture.

One of the simplest forms of insurance is suggested by C. K. Shedd, agricultural engineer of the United States Department of Agriculture. If winter feeding has emptied any crib space, it is good management to move any doubtful corn to the emptied space. This will mix the moister ears with the dryer ears, and it will be possible to remove most of the shelled corn and dirt and sort out for immediate use any pockets of corn that are too wet to be safe.

Shedd points out that the cold of winter blizzards is not injurious to cribbed corn, but that blizzard-driven snow may penetrate for some distance into the corn, or the wind may drift snow on top of the corn. Thus the moisture content of corn may be higher in March than it was in December.

Another complication in many areas was the size of last year's crop. Some farmers who did not have crib space for the unusually large crop stored corn in the driveways of double cribs. This reduced ventilation for all the corn. Such corn should be removed immediately and disposed of soon even if it seems dry. To be safe for storage in this way, says Shedd, the corn would have to be down to a moisture content of about 14 percent. Shedd says that with warm weather coming, the farmer has only three choices for corn that is not now in safe conditions: (1) Let it spoil; (2) sell it; and (3) get it into safe condition for storage until it will be used.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

In Texas, Oklahoma, New Mexico,
Arizona, and California

MAY IS BEST TIME TO KILL SAGEBRUSH

Spraying with 2,4-D to kill off sagebrush that has encroached on ranges in the southern part of the Great Plains gets best results when the work is done in May when the sagebrush is making the most vigorous growth. Airplane spraying promises to get the cost down to a point where the increase in the carrying capacity of the range will make spraying practical and profitable on a great part of the 5,000,000 acres of sandy range lands in the area. This is shown in spray tests by United States Department of Agriculture investigators at the Southern Great Plains Field Station near Woodward, Okla.

The tests have established that late April or May is the best time for applying the spray. E. H. McIlvain and D. A. Savage, who have made the tests, say that several commercial formulations do satisfactory work, but they hope that another season or two of comparative tests will make it possible to recommend even cheaper sprays that will get results.

Clearing the range of sagebrush has a remarkable effect in increasing the forage yield of the range without need for expensive reseeding. The investigators find that in most areas of sandy range that have been overgrazed, sage has come in to crowd out the grass. When the sagebrush is removed these remnant plants will provide seed for thickening and improving the grazing cover if controlled grazing is practiced. Blue grama and sand dropseed grasses are principal forage plants on much of the deteriorated sagebrush range. In tests on typical range areas the killing of the sage increased carrying capacity by 45 percent.

(Over)

The 2, 4-D spray is also effective against several other range weeds, including skunkbush and sand plum, but has not proved very effective against shinnery oak.

Benefit to the range from sage eradication is clear as the result of tests started at Woodward as early as 1937. Mowing the range for two successive years in May or early June killed the brush and increased yields of forage. Mowing was too expensive, however, for much of the low value range. In 1946 small scale tests with 2,4-D proved so promising that airplane spraying was tested in 1947 and 1948. These confirmed the fact that May is the best time for spraying.

One season's spraying kills most of the tops, but many root sprouts come up the following year, and a second spraying the following May is needed. One year of spraying following a mowing gave an excellent kill.

Results so far indicate that the esters of 2,4-D give a slightly quicker kill than the salts. One pound of acid equivalent to the acre of either sodium or amine salt of 2,4-D is enough.

Three-fourths pound of the ester form of 2,4-D is adequate. The salts are applied in an oil-water emulsion using 4 gallons of water and 1 gallon of diesel oil per acre. The esters are applied in 3 gallons of diesel oil per acre.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO
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United States Department of Agriculture

In Washington, Oregon,
Montana, Idaho, Utah,
Wyoming, Colorado, California, Nevada, Arizona,
New Mexico, Nebraska,
Kansas.

USE OPERATORS WITH ABILITY FOR AIRPLANE SPRAYING

Farmers who are considering hiring of airplane service to spray crops for weed control should make contracts with a company or operator that has had considerable experience, has demonstrated ability to do the work satisfactorily, and is known to be reliable and financially responsible.

F. L. Timmons, research agronomist on weed control in the U. S. Department of Agriculture, included this suggestion after the warning to airplane operators that he voiced at the Western Weed Control Conference at Bozeman, Mont. "Airplane application of herbicides," he said, "is not just an opportunity for a profitable adventure for anyone who happens to own a plane and can rig it up with some sort of spray boom. It is a highly technical business requiring considerable training and experience in operating airplane spraying equipment, and a thorough understanding of the hazards involved, both to personnel and to crops. No operator or company should attempt commercial spraying until he has had this training, and has this understanding. A spraying organization should also be able to assume the financial risks of loss of equipment or personnel and damage to crops, or should have adequate insurance to cover such risks."

Sprays of 2,4-D have been the weed killers most widely used, and Timmons notes that dusting with 2,4-D has been ruled out because of the danger of damage from drifting dust.

(Over)

Timmons also emphasizes that although weed control by spraying in the spring wheat area is now well established, much of the other use of 2,4-D has been of an emergency nature. Widespread spraying of winter wheat in Kansas and Nebraska in 1948 was a result of unusual weediness of fields following a dry planting season in the fall of 1947. Much of the corn weeding in 1947 was the result of a wet spring that prevented cultivation until the weeds threatened to "take" the corn. Many farmers "took a chance" on spraying corn with the feeling that anything they could save would be pure gain.

Several States this year are likely to have new laws regulating application of 2,4-D, particularly from airplanes. A good law drawn along these lines, says L. W. Kephart, who is in charge of Federal weed research, should more or less automatically restrict airplane treatments to operators who are experienced and financially responsible. "Farmers in States that do not have regulatory laws," he suggests, "could get many good pointers by studying the best of these new regulatory measures."

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United States Department of Agriculture

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RMA TRACES COSTS OF TOMATO MARKETING

Farmers who grow fruits and vegetables, and consumers of these crops, will get new information on who gets the consumer's dollar from a study made on the marketing of South Carolina tomatoes in New York City. The study was made by the South Carolina Agricultural Experiment Station and the U. S. Department of Agriculture under the Research and Marketing Act, and is similar to others now under way with other crops.

Here is what this study, made in June 1948, showed:

For a 30-pound lug of green tomatoes marketed in June the South Carolina grower got $1.68½--less than 6 cents a pound--for producing, picking, and delivering tomatoes to the packing shed.

Local people who graded, packed, and loaded the lug got 67 cents a lug.

The freight or trucking costs averaged 48 cents.

Costs of the first sale in New York, including commission, cartage, inspection, and other incidental charges were 43½ cents.

The wholesale and retail trade in New York City--including costs for storage, ripening, and repacking--accounted for $2.12. Spoilage and discard from a lug reduced the marketable fruit to 22 pounds that sold for $5.39--nearly 25 cents a pound.

The study showed that growers would do well to send only high quality fruit to market. Unsalable fruit has to bear the expense of freight and other marketing charges. The study indicates a possible saving in shipping in field boxes holding about a bushel. Repackers like tomatoes handled this way, and truckers will return boxes for 15 cents each.

This study did not get into analysis of costs after the first sale on the New York market. The authors comment on need for "more specific information as to costs and profits making up the relatively large wholesale and retail margin of $2.12"--about 39 percent of the cost to the consumer.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO
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United States Department of Agriculture

In All States

"ONE-DAY" SWINE ROUNDWORM TREATMENT EFFECTIVE

The "one-day" treatment with sodium fluoride for ridding swine of large roundworms is proving a simple and generally safe way of getting rid of these parasites, says the U. S. Department of Agriculture. Further experiments by the Bureau of Animal Industry indicate that the recommended dosage of 1 pound of sodium fluoride mixed with 100 pounds of dry, ground feed allows a margin both for safety and for effectiveness. It is a simple treatment because it calls for no advance starving of the pigs for a day, and for no need to handle the animals.

(Note to extension editor: Your extension livestock man can supply best comment or additional recommendations for your State.)

Further experiments with the method reported by Dr. F. D. Enzie included tests of medication at lower rates--one-half pound and three-quarters of a pound to the 100 pounds of feed. The half-pound dosage was too light and did not remove enough of the roundworms. The three-quarter-pound dosage was about as effective as the full pound rate.

An important factor in this treatment is the fact that the pigs do not like the dry, ground feed that is medicated with the sodium fluoride. Because of this a pig will not eat enough of the active poison to harm itself, but will eat enough to kill practically all of the roundworms. In the recent tests the pigs fed the 1-percent dosage ate only 43 percent as much feed as they had been eating daily. At the three-quarter-pound rate they ate just about half as much as they did the day before.

The veterinarians emphasize that the weight of the sodium fluoride should be calculated on the basis of the weight of the dry, ground feed, and not on the basis of the weight of the animals.

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WEEKLY NEWS SERVICE
EXCLUSIVE TO EXTENSION EDITORS
United States Department of Agriculture

FARM LAND PRICES DOWN FIRST TIME IN 10 YEARS

After 10 years of almost steady climbing, farm land prices in the country as a whole appear to have reached the postwar peak, says ________________. (Extension Official)

Land prices in ______________ (State) are up (down) _____* percent from November. And values in this State still are _ _____ percent above prewar average, 1935-39.

Referring to "Current Developments in the Farm Real Estate Market," just released by the Bureau of Agricultural Economics, U. S. Department of Agriculture, Mr. __________________ __ points out that United States land prices turned downward 1 percent during the last 4 months ending March 1. This, he said, is the first significant decline in these prices since the late thirties, though, for the country as a whole, they are still more than double the average in 1935-39.

During the past 12 months, the prices of land purchased have continued to rise a little, but the 3-percent rise in the past year is a slowing down from the 7-percent rise for the previous 12-month period and the average of about 12 percent a year in the war years.

In the past 4 months, land prices were holding firmer in the Middle Atlantic and East South Central States than in other regions. They were declining in all the Mountain and Pacific States and in scattered States in the East North Central and New England regions. Increases were found in half of the States of the Union, but these were more than offset by declines in 16 States.

Voluntary sales of land in the United States fell off about 17 percent during the past year as compared with the previous year; and sales were down nearly a third below the peak shown for the year ending March 1947.

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* Fill in blanks from appropriate maps in attached report.

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EXCLUSIVE TO
EXTENSION EDITORS

WEEKLY NEWS SERVICE

United States Department of Agriculture

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RURAL ELECTRIC CO-OPS. OBSERVE REA ANNIVERSARY

2/18-e A tribute to the contributions which the local groups operating REA-financed power systems have made toward improvement in farm living standards and production methods was paid today by Director ______________________________ of the ________________________ State Extension Service.

The occasion of Mr. ________________________'s statement was the 14th anniversary of the establishment of REA, on May 11, 1935.

For farmers in (1) ________________________, this 14-year period has produced a great technological revolution on their farms. The REA program, achieving its maximum effectiveness during the period in which farm production and income reached their highest levels, has proved a boon to both the farm housewife and farmer.

Central station electric service, has been extended rapidly in rural areas (1) ________________________ since REA was established. Outmoded living conditions have been steadily replaced by modern methods. The average farmer today has at his finger tips new facilities which speed up crop processing, improve farm products and allow farmers to diversify their production.

"No one can measure what the rural electrification program has achieved in (1) ________________________," Mr. ____________________ declared. "The fact that the REA-financed program has brought electric lights out from the cities to the farm home, alone, would be a substantial contribution to the welfare of rural people. But when electric lights are coupled with the scores of modern home appliances, such as the radio, refrigerator, vacuum cleaner, washing machine, an iron and numerous smaller appliances, the contribution is inmeasurable. For instance the electric water-pressure system has made modern bathroom facilities available on every farm which has central station service."

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In addition, (1)________________'s farmers have added thousands of dollars to their incomes through the profitable use of electricity on their farms, Mr.________________________stated. In particular, the use of electricity to modernize dairy farming and poultry raising has improved the quantity and quality of farm production and has increased farm income.

"Application of electricity to farming and farm living is only starting." "Mr.________________________declared. "Too few of our farms have electric water systems and bathroom facilities. We know that the farmer has not yet developed the full potentialities of the use of electric power in his farming operations. More research and study by all concerned is needed to advance this power use on the farms."

Rural Electrification in (1)________________________has come a long way since May 11, 1935, the day the late President Roosevelt issued an executive order directing the establishment of REA as an executive agency. REA was made a permanent agency a year later when Congress enacted the Rural Electrification Act of 1936. It is an agency of the Department of Agriculture. REA's main function is to act as a banker, lending money to independent local business firms at two percent interest for a 35-year period.

In 1935 only (2)________________farms, or (3)________________percent in (1)________________________had central station electric service. As of June 30, 1948, REA estimated that (4)______________farms, or (5)____________________ percent, were electrified. This was an increase of (6)____________________ percent in a 13-year period. This expansion has resulted from connections by the REA-financed cooperatives or by commercial utilities stimulated to greater efforts by the REA program.

Even with this outstanding record (7)________________farms in__________ (1)______________were still waiting for electric service on that date.

3-Extension

Important contributions in the outstanding success of the REA program have been made by the many State Extension Service employes who helped farmers organize the rural electric cooperatives in the State, Mr.____________________ reported. In many areas of the State the county agent took the initial steps in the formation of electric cooperatives. During the past few years county agents have promoted power use on the farm as one of their important educational programs. County agents realize that modern successful farm operation and management includes the profitable use of electricity, Mr.________________ declared.

The REA program was started in (1)______________when the first loan was approved on(8)______________________. The first section of rural line was energized on (9)__________________________by the (10)__________________________ __________________________________ . Since then (11)__________________ borrowers have energized their systems.

The REA borrowers in (1)_______________are now in a stretch drive to finish the program as soon as possible, Mr.____________________declared. Most of the cooperatives are extending their systems to serve the thinner settled parts of the areas in which they operate. Cooperatives are also "heavying up" existing distribution lines to meet increased demands by farmers for power. When the first REA-financed lines were built, most were designed to deliver 75 to 100 kwh a month per member. But the demand has increased so fast that systems are being revamped to provide a minimum 200 to 400 kwh per month.

The average consumption per farm served from REA-financed lines in (1)___________________has increased from (12)_________________kwh in December 1941, to (13)_______________kwh in December 1948.

As of March 31, 1949, REA had approved loans totaling $ (14)______________

to(15)__________borrowers in(1)________________, including (16)___________ cooperatives. These funds are to finance (17)___________miles of line to serve (18)___________rural consumers.

REA had actually advanced $ (19)_______________of these loans, and the borrowers as of February 28, 1949 were operating(20)_____________miles of line and serving (21)__________farms and other rural establishments. Since June 30, 1948, the number of consumers has increased approximately(22)________ percent.

The REA borrowers through March 31, 1949, had paid $(23)______________on principal and interest, including $ (24)_______________paid in advance on principal. Only $ (25)______________was overdue more than 30 days.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

In All States

Newcastle Disease I

NEWCASTLE DISEASE REMAINS SERIOUS

Newcastle disease continues to be a menace to the poultry industry. Research is continuing toward improved methods of control. Two kinds of vaccine are available for use when needed. The disease is serious and has spread widely and rapidly. It has been reported from every State. In recent years it has caused economic losses in poultry second only to pullorum disease. Prudent poultry growers should inform themselves on the vaccination situation and should be ready to immunize when local conditions make this advisable.

Meanwhile, strict attention to sanitation and the blocking of channels for transfer of infection remain the most desirable form of protection for most poultry growers. Serious as it is, the disease--as it has developed in this country--has not yet proved as deadly in the proportion of chickens killed as it has in several other countries.

This summarizes the attitude of the veterinary scientists of the U. S. Department of Agriculture who are studying the disease and methods of prevention and control.

For most meat and egg producers in areas where the disease has not caused serious losses, the Bureau of Animal Industry does not recommend vaccination except on authoritative advice from local authorities. If Newcastle disease strikes a producing flock, a good procedure is to burn or bury all dead birds. Susceptible chickens should not be brought to the premises for at least 4 weeks after the outbreak.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

In All States

Newcastle Disease II

Sanitation Essential in Newcastle Control

No experience is by far the best experience with the Newcastle disease. Growers who have not yet had trouble will be wise to go to considerable pains to keep it off the premises. Block off as completely as possible every channel by which the virus can get to a healthy flock, say U. S. Department of Agriculture specialists. Experience has shown, says the Bureau of Animal Industry, that the disease can be spread both directly and indirectly. The virus is long lived and durable. Some channels to watch are:

(1) Visitors and buyers: The virus can be carried on shoes, clothing, crates, and trucks. Keep visitors out, and tell the poultry huckster to stop in the road. Carry out birds and eggs and sell them away from the yard.

(2) Shipment of exposed birds should be avoided.

(3) Require dealers to sell feed in new bags or show that they are re-using old bags only after thorough steam sterilization.

(4) Crates returned from market should be thoroughly sterilized before they are allowed on the premises.

(5) Poison rats, and keep cats and dogs out of yards and feed rooms. They may act as mechanical carriers of the disease.

(6) New stock should be added only after a quarantine period of several weeks to insure that they are free from disease.

(7) Fairs, shows, and laying contests are hazards. It is very unwise to return these birds to the farm. They should always be sold for slaughter.

(8) Buy chicks only from hatcheries (preferably local) that apply rigid sanitary control.

(9) Attend strictly to prompt disposal of all birds dying from any cause by deep burial or burning.

These precautions have always been in the line of good poultry management. The presence of Newcastle disease makes them far more important than ever before.

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United States Department of Agriculture

In All States

Newcastle Disease III

KILLED-VIRUS VACCINE AIDS NEWCASTLE CONTROL

To combat Newcastle disease of poultry, two types of vaccine--killed-virus and live-virus--are authorized by the Bureau of Animal Industry, U. S. Department of Agriculture, which supervises the manufacture and sale of veterinary biological products. The killed-virus vaccine is prepared by inoculating a small quantity of the virus into fertile eggs, which have been incubated 10 to 12 days. The virus multiplies in the egg tissues and kills the embryos in 2 days. The eggs are then broken and the embryo, with its membranes and fluids, is removed. These materials, to which a small amount of formalis is added to kill the virus, are emulsified in tissue mills. This emulsion is injected into a healthy bird. This vaccine creates an immunity that protects against infection for a short time.

A practical application of vaccination with the killed virus is in protection of flocks of broilers when the disease is prevalent in the locality and the hazard of infection warrants the expense of vaccination. The immune period should carry them to market age.

Another practical advantage of this form of vaccination is that the temporary immunity created by the killed virus carries young birds through the time of their lives when the disease is most deadly. Experience here and in other countries has been that the older birds are much more likely to recover from Newcastle disease than are broilers or young pullets that have not reached the laying stage.

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EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

All States

Newcastle Disease IV

LIVE-VIRUS FOR NEWCASTLE STILL EXPERIMENTAL

A live-virus vaccine is being used to combat Newcastle disease of poultry. The Bureau of Animal Industry authorizes limited manufacture of this biological preparation, and has participated in large-scale tests of the vaccine. In some respects it is more effective than the dead-virus vaccine. But the Bureau regards it as still in the experimental stage and does not yet recommend vaccination except in areas where the disease is epidemic and where State livestock officials have had experience enough to give sound advice.

The live-virus vaccine is actually the virus of a mild strain of the disease. Vaccinated birds gain lifelong immunity. Young birds go through a few days of mild reaction. There may be a few deaths (rarely more than 2 percent). If pullets are vaccinated before maturity, they avoid the sharp stop in egg laying that occurs if they have the disease after they are laying. Layers that are vaccinated go through the abrupt stop in egg laying that is one of the symptoms of Newcastle disease in laying flocks. It is recommended that chicks be at least 5 weeks of age before being vaccinated with live-virus vaccine.

All susceptible stock on a farm should be vaccinated simultaneously. If this is not done, the virus can spread from the vaccinated birds to susceptible unvaccinated birds.

Many hatcheries now sell only chicks hatched from eggs laid by hens that are immune to Newcastle disease, either from natural exposure of the disease or by vaccination with live-virus vaccine. Such chicks carry a so-called congenital immunity for a period of 2 to 4 weeks after hatching.

For most meat and egg producers who are not breeders, the Bureau advises against vaccination except on authoritative advice from local authorities.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS
in All States

United States Department of Agriculture

IDENTIFY BEST POTATOES FOR CHIPS

Tests by the U. S. Department of Agriculture have identified eight varieties of potatoes as desirable for potato-chip making after the potatoes have been stored. A farmer who plans to grow potatoes for sale to chip makers can now plant whichever of these potatoes is best adapted to his soil and climate. Chip makers who have had trouble in buying on the market potatoes that are of satisfactory quality will now be in position to contract with growers for a supply of one of these varieties. Several leading market potato varieties proved of poor chip-making quality after storage.

The varieties that made the most satisfactory chips in the storage and chip-making tests at the Department's laboratory at Beltsville, Md., were: Chippewa, Kennebec, Netted Gem, Norkota, Russet Rural, Rural New Yorker, Sebago, and Teton.

The Department undertook this work, under the Research and Marketing Act, to be able to give reliable advice to many chip makers who had reported difficulties from using stored potatoes. The chip industry provided a market last season for about 20 million bushels of potatoes.

Good quality chips can be made from nearly all varieties in the weeks immediately after harvest. But chip makers find that storage cuts down the quality. Previous research showed this was because cool storage causes some of the potato starch to turn to a sugar, and this caramelizes and causes dark color when chips are cooked in hot fat.

If potatoes are stored at 55 degrees there is less change to sugar than at the more usual potato storage temperatures of 35 to 45 degrees. Potatoes stored cold do not make good chips if used immediately. But if kept at 70 degrees for 1 to 3 weeks, some potato varieties will reconvert this sugar to starch and will regain chipping quality. Other varieties do not make this change to the same degree. It was to identify the varieties that do reconvert well that these tests were made last season.

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WEEKLY NEWS SERVICE

United States Department of Agriculture

EXCLUSIVE TO
EXTENSION EDITORS
In All States

FARMERS BEAR THE BRUNT OF DROP IN FOOD COSTS

Farmers had to take the biggest part of the July-to-February drop in retail food prices, says ________________ (Extension official) in referring to an article in the May Agricultural Situation just released by the Bureau of Agricultural Economics.

A family "market basket" of farm food products, for which consumers paid an annual rate of $708 at retail last July, cost consumers $70 less in February. Most of this saving to consumers was due to the lower prices farmers received for their food products. Farmers took more than four-fifths of the drop, or $57. Reduction in marketing costs accounted for only $13 of the $70 saved to consumers. This sort of thing is not unusual, Mr. ________ said, explaining that marketing charges are characteristically more rigid and change more slowly than prices of farm products.

According to the article, written by Richard O. Been, of BAE, the marketing cost of the annual market basket of the average family of three in February was $317--about the same as the entire retail cost of the market basket had been in either '39 or '40. "In other words," says the article, "even if farmers had given their products away in February, marketing charges being the same, the market basket would have cost consumers as much as just before the war."

Touching on the relatively small decline in marketing costs, it was pointed out that freight rates have risen about a third in the last 2 years, and that wages, the chief item in marketing costs, are more than double prewar. There is little prospect for large reductions in these items soon, it was pointed out.

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United States Department of Agriculture

In Ariz. Ark., Calif., Colo.,
Idaho, Ill., Iowa, Kans., Mich.,
Minn., Mo., Mont., Nebr., Nev.,
N. Mex., N. Dak., Okla., Oreg.,
S. Dak., Tex., Utah, Wash., Wis.,
Wyo.

Grasshopper Release No. 1

FARMERS URGED TO CUT LAST YEAR's HOPPER LOSSES

Farmers in ______________ (State) lost $_____________ in crops last year because of grasshoppers, according to ____, (State leader in charge of grasshopper control) who says the control program this year should lower that figure considerably.

(Note: Figures for your State are on the attached sheet)

"We're depending on the individual farmer to bear the brunt of the job this year, because of two new insecticides on the market which he can easily get and use," says Mr. ______________________.

Chlordane and toxaphene are the two new recommended chemicals--they give a better kill than any grasshopper poison yet developed.

"This year with these new chemicals we stand a good chance of saving our crops from grasshoppers if each farmer will take care of his own crops. It's not necessary now to help them get the supplies for the bait or help them mix it. If a farmer has any kind of spraying or dusting equipment, that's all he needs for applying either the chlordane or the toxaphene if he does his control work at the right time."

For every dollar spent for grasshopper control last year, $_________ was saved, said Mr. _______________. This year, for the first time, farmers can widen that margin for themselves if they get and use either of the new insecticides.

In places where migrating grasshoppers increase beyond control of individual farmers, Federal and State control workers will cooperate with the local community in all-out war on the hoppers. Chlordane or toxaphene will also be used in these operations, but probably in bait form which is practically only for such large-scale control work.

State	Value of crops destroyed by grasshoppers--1948 (Dollars)	Estimated amounts saved for each dollar spent
Arizona	109,624	60
California	455,103	80
Colorado	7,197,228	74
Idaho	11,020	15
Kansas	6,664,893	94
Michigan	762,112	36
Minnesota	548,588	17
Missouri	1,422,239	75
Montana	1,601,766	22
Nebraska	3,443,314	99
Nevada	10,000	1-
New Mexico	21,904	38
Oklahoma	3,052,293	78
Oregon	144,000	18
South Dakota	763,410	14
Texas	4,943,958	86
Utah	651,835	24
Wisconsin	2,153,171	29
Wyoming	2,870,166	12
Total or average	36,826,624	55

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Nev., N. Mex., N. Dak., Okla.,
Oreg., S. Dak., Tex., Utah,
Wash., Wis., Wyo.

Grasshopper Release No. 2

1949 GRASSHOPPERS DUE IN STATE SOON

Crop-devouring grasshoppers will be making their appearance in ____________ (State) within the next few ____________ (weeks/days), according to ________________________ (State leader in charge of grasshopper control).

Mr. ________________________ urges farmers to watch their field margins closely for signs of the hoppers. They breed and hatch in field margins, along fence rows, in ditches and uncultivated lands.

The best time to kill the most grasshoppers is while they are still in their hatching places--while they are young and before they move onto the croplands.

"Keep an eye on those breeding places," says Mr. ________________________, "and be ready with your sprayer or duster to serve them either chlordane or toxaphene as they hatch."

Chlordane and toxaphene are the two new recommended grasshopper insecticides which farmers can buy and use themselves this year to protect their own crops. Since these two new chemicals are easy to get and apply, farmers can do a better job of grasshopper control.

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Grasshopper Release No. 3

TWO NEW GRASSHOPPER POISONS ON HAND

Plentiful supplies of two new chemicals are on hand throughout __________ (State) to help farmers in this year's battle with the grasshopper. These two new weapons, according to ______________________________ (State leader in charge of grasshopper control), should be available wherever insecticides are sold, or at any seed or farm equipment store.

The new chemicals are chlordane and toxaphene, which Mr. __________ says are the most effective hopper killers developed to date. Not only are chlordane and toxaphene potent poisons, but if sprayed or dusted they cling to the plants and provide more protection for crops than the old sodium fluosilicate bait, which falls to the ground after spreading.

Farmers are expected to obtain and apply the new insecticides themselves this year. Until this year, farmers could not easily get bait or equipment. State and Federal aid was necessary to obtain supplies to make the bait for the farmers and then help them mix it.

Chlordane or toxaphene, however, is easy to get and easy to apply. One pound of chlordane or one and a half pounds of toxaphene will cover an acre if it is sprayed. For dusting, it takes one and a half pounds of chlordane or two pounds of toxaphene to treat an acre. Spraying seems to give a better kill than dusting. Mr. ________________ says either chlordane or toxaphene is equally effective and that cost of the chemicals also averages out about the same. They can be applied with any type of spraying or dusting equipment.

Mr. ____________________ recommends that individual farmers not try to use chlordane or toxaphene in bait form. They are practical in bait form for large-scale operations only.

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Grasshopper Release No. 4

EARLY 'HOPPER POISONING WILL SAVE MONEY

____________________ (State) farmers can save themselves a lot of money and work if they fight grasshoppers in the right places, says Mr. ____________________ (State leader in charge of grasshopper control).

Farmers are urged to kill the grasshoppers while they are still in their breeding places. Watch for signs of first hatching in the field margins, fence rows, ditches, and idle lands bordering cultivated fields, Mr. ____________ says. The hoppers hatch there and then move out on croplands.

Farmers can make the best use of their insecticides if they spray or dust the hatching grounds while the hoppers are young. One treatment usually will kill the hoppers in the breeding places. They start to spread out as they move into the crops. By spraying or dusting before they migrate, the farmer can greatly reduce the acreage he has to cover.

"Treat the hatching places thoroughly with either chlordane or toxaphene, the two newly developed grasshopper insecticides," Mr ____________________ recommends. These chemicals can be bought at any seed or farm equipment store, or at any place where insecticides are sold.

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Grasshopper Release No. 5

USUAL EQUIPMENT OK FOR GRASSHOPPER POISONS

Farmers don't need to invest heavily in new equipment to make use of the new recommended grasshopper killers. Chlordane and toxaphene, the two new insecticides being recommended this year, can be applied with any spraying or dusting equipment already on hand.

Farmers are urged by ________________________________ not
(State leader in charge of grasshopper control)
to buy additional equipment if they already have equipment that can be used for spraying or dusting.

"If you have spraying or dusting equipment of any kind, use that to spread the chlordane or toxaphene. If you do not, and plan to buy equipment, get a sprayer, since spraying is somewhat more effective than dusting."

The type of spraying equipment the farmer should buy depends chiefly on the acreage to be treated. Mr. ____________________ suggests that farmers ask their county agent for advice on the type of spray for individual needs.

Where sodium fluosilicate bait is available, farmers should use it. It will give good results except where hoppers must be controlled in alfalfa or other succulent crops. Then use chlordane or toxaphene according to recommendations. These chemicals cling to the plants when sprayed or dusted, but the sodium fluosilicate bait falls to the ground after spreading.

If sprayers have been used to apply weed-killing chemicals, the sprayer should be cleaned thoroughly before applying grasshopper poisons to crops. Ask your county agent how.

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Grasshopper Release No. 6

CARE NEEDED IN HANDLING NEW GRASSHOPPER POISONS

Care should be used by farmers in ____________________ (State) in handling the new grasshopper insecticides, warns Mr. ______________________________ (State leader in charge of grasshopper control).

"Chlordane and toxaphene are the best grasshopper killers developed to date," says Mr. ______________________, "but they should be used with the caution that ordinarily applies to any insecticide."

Chlordane and toxaphene, the grasshopper killers recommended this year, are, like most insecticides, poisonous to man and livestock. The chemicals should not be applied to parts of fruits and vegetables that will be eaten or marketed unless residues can and will be removed by washing or stripping, advises Mr. ______________________.

Forage treated with the new insecticides should not be fed to dairy animals or to animals being finished for slaughter. Although neither chlordane nor toxaphene, when used according to recommendations, appears to affect the health or development of livestock, the chemicals may accumulate in the fatty tissues of dairy animals or be given off in milk and butterfat. Meat animals fed for long periods of time on treated forage may accumulate enough of the chlordane or toxaphene in their tissues to make the meat unfit for food. If no treated vegetation is fed during the last 2 months before slaughter, it is much less likely that the meat will be affected.

If spraying is necessary during the period when legumes are in bloom, it should be done in the early morning or late evening while bees are inactive. Sprays are less harmful to bees than dust.

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Wis., Wyo.

Grasshopper Release No. 7

DIRECTIONS GIVEN FOR USING GRASSHOPPER POISONS

Farmers using either of the new grasshopper insecticides, chlordane or toxaphene, are urged by Mr. ______________________________ (State leader in charge of grasshopper control) to make correct use of them for best results.

"They must be applied properly, at the right time, and in the right places to be effective," says Mr. ________________.

Roadsides, canal banks, ditches, field margins, or idle lands bordering cultivated fields should be sprayed or dusted before the young hoppers begin to move off the hatching grounds. Grasshoppers that damage row crops usually hatch in the field margins, and timely spraying or dusting will destroy them before they move into the fields.

When hoppers overrun an entire alfalfa field, it is usually cheaper in the long run to cut the alfalfa and then use the chlordane or toxaphene to protect the next cutting. This avoids dangerous residues. Spray or dust the next crop when the vegetation is 6 to 10 inches high. Spraying seems to be a little more effective than dusting.

When sprays are used, 1 pound of chlordane or 1½ pounds of toxaphene will cover 1 acre. When using dusts, use 1½ pounds of chlordane or 2 pounds of toxaphene per acre. Slightly lower dosages are effective against newly hatched grasshoppers and slightly higher amounts may be necessary late in the season when most of the grasshoppers are adults and vegetation is maturing. The amount should be carefully adjusted, since too much material increases the danger of residues, but too little may not prevent crop losses.

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For States west of Iowa
including Texas, Kansas,
and Minnesota.

Grasshopper Release No. 8

URGES GROUP EFFORT AGAINST GRASSHOPPERS

Farmers in ____________ (State) are urged by ____________ (State leader in charge of ____________ grasshopper control), to make arrangements among themselves this year to make the greatest use of the spraying and dusting equipment in their area to control grasshoppers.

"Farmers in many places do not protect their own crops completely. Under some conditions the farmers' job is greater than treating his own farm," says Mr. ____________. "Roadsides, pastures, and idle lands are favorite breeding places of migratory hoppers."

Mr. ____________ says that farmers can make a local cooperative project out of spraying or dusting railroad right-of-ways, canal banks, roadsides, and vacant lands, since every farmer in the community benefits from this cooperative effort. Cooperative use of equipment on the farm can also be used to advantage. Custom operations are also being encouraged to help out those farmers who do not have spraying or dusting equipment and cannot treat their own acreage.

A large part of the success of the grasshopper control program this year depends on individual and local efforts. This year, for the first time, farmers can easily get and use either of two new insecticides--chlordane or toxaphene. In previous years, Federal and State aid was necessary to get bait for the farmers and help them mix it. Chlordane or toxaphene, however, can be bought in any seed or farm equipment store or in any place where insecticides are sold. They can be applied with any type of spraying or dusting equipment.

Custom operations to control grasshoppers should be profitable both to farmers and operators. The new insecticides are the most effective grasshopper poisons developed to date, and they are easy to get and use.

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Grasshopper Release No. 9

BACKGROUND STATEMENT ON GRASSHOPPERS CAMPAIGN

This year may well be the turning point in the age-old battle between the farmer and the grasshopper, because of two newly developed and highly potent grasshopper poisons. With these two chemicals, chlordane and toxaphene, ____(State)____ -- farmers stand a much better chance this year than ever before of saving millions of dollars worth of crops that might otherwise be lost to the pests.

During the past 12 years, grasshoppers have destroyed over 483 million dollars' worth of crops in 24 States.

In ____(State)____ alone, grasshoppers have devoured crops valued at ____(amount)____ during this same period. Histories of the hoppers indicate that their population tends to pyramid to plague proportions in approximately 10-year cycles. Grasshoppers that invaded western States in 1938 destroyed more than 83 million dollars' worth of crops. After a sharp decline in 1940, the amount of damage done has steadily increased again with the total loss for ____(State)____ last year estimated at ____(amount)____. Surveys made by the U. S. Department of Agriculture and cooperating agencies last fall indicate that farmers may have even more grasshoppers on their hands this year than last.

Individual effort and community cooperation, along with the use of chlordane and toxaphene, will keynote the 1949 grasshopper control program. These new weapons were tested extensively over a period of 3 years in laboratory and field experiments conducted by grasshopper-control specialists. Over 30,000 acres of grasshopper-infested range land was sprayed last fall in a single experiment that proved chlordane and toxaphene to be the most effective grasshopper killers developed to date.

Since 1934, when Congress first appropriated money for grasshopper control work, efforts have been directed toward improving the type of grasshopper poison and the method of using it. Until this year, poison baits containing bran, sawdust, and sodium fluosilicate were used. Materials for the bait were difficult for most farmers to get, and Federal and State aid was necessary to supply the farmers with bait. Equipment and help in mixing the bait was also necessary. Community stations were set up to mix the bait properly and to distribute it to farmers, who then spread it themselves.

(More)

Chlordane or toxaphene, however, can be bought by farmers at almost any seed or farm equipment store or in any place where insecticides are sold. With these two chemicals, farmers for the first time have a grasshopper poison which they can get and use themselves. With chlordane or toxaphene, the individual farmer can carry on a control program of his own to protect his own crops. He can buy either the chlordane or toxaphene at a reasonable cost, and with any type of spraying or dusting equipment he has on hand can treat his own acreage.

Thus, a large part of the success of the grasshopper control program this year will depend on the efforts of the individual farmer. This is particularly true in States east of Iowa, where grasshoppers seldom migrate for any distance and a farmer can kill off those hatching on his own land without fear of attack from others that might move in next day.

Farmers in States west of Iowa are not so fortunate. In certain parts of this area, farmers may be victims of the migratory hoppers which threaten crops over a large distance. Swarms of the migratory hoppers in the West can fly for miles, drop into an area, completely devastate the crops in the vicinity, and fly on to another area miles away, all within 3 to 4 days.

In emergency outbreaks of the migrating species, Federal-State control workers may wage a large-scale offensive. These outbreaks are obviously beyond control of the individual farmer who cannot know in advance when a swarm of hoppers 50 miles away one day will descend on his crops the next. Obviously, these hoppers must be killed before they start migrating.

Cooperative surveys conducted in the fall by the Bureau of Entomology and Plant Quarantine and the States concerned forewarn farmers and ranchers of impending outbreaks in "hot" spots over wide areas. Surveys in the fall of 1948 showed that huge areas from Texas north to Canada and from Michigan west to California may be in for trouble with literally billions of the hoppers. That is, unless weather or other natural factors come to the aid of farmers by killing the grasshoppers off.

Especially severe infestations may occur in eastern Montana and Wyoming, in western Nebraska, and Kansas, and in Texas. Spots of considerable infestation were discovered in irrigated sections of Utah, Arizona, New Mexico, and California. Entomologists found over 162,000 acres of egg beds of the migratory species in a great area involving California, Oregon, and Nevada.

In the eastern parts of Wyoming and Montana, where infestations of the migrating hoppers are expected to be particularly severe, a million and a half acres may be divided up into control areas and all-out war waged there against the hoppers. Cooperative, large-scale effort is essential in such cases where the hoppers migrate and increase beyond control of the individual farmer. Federal, State, and local funds will finance this control work.

The extent of Federal participation in such control programs will depend on such factors as the value per acre of the crops involved, the extent to which they are threatened by infestations, the extent to which lands of private and public ownership are intermingled, the species of hoppers concerned, and the need for special equipment to fight them.

Chlordane and toxaphene will be used largely in bait form for these large-scale control programs and will probably be spread by airplane.

Both of the new insecticides are equally as effective for the individual farmer when sprayed or dusted at the right time in the right places. If roadsides, field margins, and other breeding places are treated when the hoppers first begin to hatch, a high initial kill is possible because the hoppers are young and concentrated in large numbers. After hatching, they spread out and move into the croplands. Chlordane or toxaphene used for direct treatment of crops will effectively protect them from hopper destruction.

Like most insecticides, chlordane and toxaphene are poisonous to man and livestock and caution is being recommended in their use. Although the chemicals do not visibly affect the growth and development of animals, they tend to collect in the tissues and make the meat unfit for consumption. Milk and butterfat are also affected if forage treated with the insecticides is fed to dairy animals.

Used with necessary precautions, chlordane and toxaphene promise doom for the grasshoppers. With the increasing awareness of their responsibilities for protecting their own crops, farmers can use these two new weapons to save their own and the Nation's crops.

State	Value of crops destroyed 1936-48	Value of crops destroyed 1948
	(Dollars)	(Dollars)
Arizona	7,218,438	109,624
California	5,917,792	455,103
Colorado	31,489,431	7,197,228
Idaho	1,051,856	11,020
Kansas	57,911,792	6,664,893
Michigan	2,527,202	762,112
Minnesota	9,070,406	548,588
Missouri	19,956,018	1,422,239
Montana	27,765,673	1,601,766
Nebraska	62,327,492	3,433,314
Nevada	724,321	10,000
New Mexico	950,709	21,904
Oklahoma	22,651,454	3,052,293
Oregon	1,885,112	144,000
South Dakota	59,058,730	763,410
Texas	26,878,211	4,943,958
Utah	10,051,917	651,835
Wisconsin	16,170,601	2,153,171
Wyoming	14,164,452	2,870,166

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United States Department of Agriculture

All States

NEW SEED DRYER USES CALCIUM CHLORIDE

A man handy with tools can build most of the equipment needed to make use of the new method of drying seed with chemically dried air. The chemical most practical to use, the U. S. Department of Agriculture recently announced, is calcium chloride which sells at 3 to 4 cents a pound. Field tests of the equipment showed it took only about 3 pounds of the chemical to reduce the moisture content of 100 pounds of blue lupine seed from 17.3 to 13 percent. A laboratory run dried blue lupine seed harvested by combine from 31 to 16 percent for about 17 cents a hundred pounds.

J. W. Simons of the Bureau of Plant Industry, Soils, and Agricultural Engineering, who is also research professor of agricultural engineering at the University of Georgia did the experimental work. He points out the three principal advantages of this method (1) Relatively simple equipment; (2) Freedom from the fire hazard of heating air for seed drying; and (3) No danger of injuring the seed by overheating it.

The equipment includes the air dryer unit and the seed dryer. The air is recirculated and passes up the dryer, then through a pipe to the fan which forces it up through the seed, and from the top of the bin it is drawn to the bottom of the dryer for another round.

The seed dryer consists of a tight bin with a screen bottom over an air chamber into which the chemically dried air is pumped by the fan.

(More)

The air dryer consists of a pan for the calcium chloride flakes over a cylinder loosely filled with corn cobs on to which the brine from the slaked chemical drips from the pan. The air is dried as it passes over the briny cobs, and is further dried as a baffle board directs it over the flaked chemical. The brine that drips from the bottom of the cobs drains away after taking on all the moisture it can absorb from the air which is moistened by drying the seed.

The tests indicate, says the Department, that chemical-drying of air can be used in drying seed anywhere, but the engineers think the principal use is likely to be in the more humid parts of the Southeast where there is need for growing seeds of covercrops, and where seed drying, even with unheated fanned air is not ordinarily practical because of high humidity.

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In All States West of
Mississippi--Missouri

FIGHT GRASSY WEEDS WITH OIL AND HARROW

In the irrigated areas of the Southwest and the Pacific Coast, grassy ditch-bank weeds, such as Johnson grass and Bermuda grass, are now giving way to treatment with aromatic weed-killing oils.

According to weed-control specialists of the U. S. Department of Agriculture, this new method of control, although too expensive for clean-up of solid fields, is suitable for limited locations, and for roadsides, railroad rights-of-way, and in citrus groves where the tillage method of control is undesirable because of excessive cutting of tree roots. These oils are now manufactured by several companies on the Pacific Coast.

Under field conditions the weed men have found that persistent intermittent tillage--six times at intervals of 2 to 3 weeks--after plowing will practically kill out these grassy pests. The practice is to go over the plowed field with a duckfoot cultivator, a quackbrass harrow, or a plain spring-tooth harrow.

In doing this anti-weed harrowing, L. W. Kephart, of the Bureau of Plant Industry, Soils, and Agricultural Engineering, suggests driving the tractor at high speed to rip out the "roots," knock off the dirt, and jerk them to the surface where they dry out and die. ("Slow driving," he says, "breaks off the roots in the soil and starts more plants.")

After such tillage treatment of irrigated land, the practice is to let it dry off for a week or 10 days, then irrigate to give the grass another start for about a week, followed by another tear-up with the harrow. Four to six such treatments will practically kill out these grasses. "But," says Kephart, "never stop watching, for a weed seed is always ready to take advantage of favorable conditions. When it's down you can't depend on its being out."

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In Md., Va., N. C.,
S. C., Ga., Ala.

RESISTANT STRAIN CAN REPLACE KILLED MIMOSA TREES

The bright mimosa, small fluffy-flowered ornamental tree of southern dooryards from Washington, D. C., to Texas, is being killed in great numbers in town- and country-wide outbreaks of wilt disease. There is, however, the probability that home owners will be able to replace wilt-killed trees with wilt-resistant trees now being propagated.

Forest pathologists of the U. S. Department of Agriculture, Bureau of Plant Industry, Soils, and Agricultural Engineering, first identified the killing fungus in 1935 at Tryon, N. C., where residents said it had already been killing trees for 5 years. The disease uses the root entrance and is not thought to be windborne at all, but in a year from its identification it was found 100 miles away and now it is known to be in 91 counties in six States from Maryland to Alabama. Living in soil, the fungus can, of course, be carried on shoes and by vehicles, machines, and animals. In 1943 it was found in a few trees in one city block of Morganton, N. C., which calls itself "The Mimosa City." By 1945 it had spread to 22 blocks and by 1948 the wilt had covered 457 blocks, practically all of them.

The pathologists classify the disease as a fusarium wilt, caused by that same genus of fungi that includes destructive wilts of tomato, tobacco, and cotton. And herein they found hope, for plant breeders had already developed wilt-resistant strains of all three of these crops. Now, as a result of tests started 10 years ago with thousands of mimosa seedlings from various localities, there are many trees resistant to wilt inoculations. In the town of Tryon there are 20 of these young trees growing vigorously "despite repeated inoculations of the fungus." The scientists have found that the practical way to reproduce these seedlings is by

(more)

means of root and stem cuttings. All such cuttings from wilt-resistant trees have proved resistant.

So, as the mimosa is a small and rather quick-growing tree, it looks as if the replacements would be well on the way before all the wilt-weak mimosas are gone.

Stock for propagation has been turned over to the Division of Plant Exploration and Introduction of the same bureau, and from the increase stocks will be put in the hands of interested nurserymen. Later the new trees will be available through these commercial channels. They cannot be obtained directly from the Department.

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In N. Dak., S. Dak., Nebr.,
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Wyo., Utah, Colo., N. Mex.

SCIENCE AIDS RESEEDING OF BUFFALO GRASS

Buffalo grass--once a big part of the maintenance of great herds of its wandering namesake--has had the drawback for man's purposes of difficult reseeding. But research started some years ago by agronomists of the U. S. Department of Agriculture and the Kansas Experiment Station at the experiment station at Hays, Kans., has finally solved this problem and developed a relatively simple treatment such as running the seed through a hammermill to break out the several seeds in each bur.

A pound of the freed seed, the researchmen have found, will produce as many seedlings as 40 pounds of the burs as they come from the plants. These dehulled seeds germinate very well--75 percent or more. The normal germination of the seeds as hidden away in the burs is only about 2 percent, a fact that has had much to do with the limited spread of Buffalo grass in areas where farmers and ranchers wished to reestablish it.

Another method of treating this seed devised by the United States and Kansas researchers at Hays, is to scour the seed, soak in 0.5 percent saltpeter solution 24 hours, refrigerate the wet seed at 40° F. for 6 weeks, and then dry it. But the Hammermill method is less bother and just as good, say the Government agronomists.

These recent problems were a minor matter for a long time, as it had been impossible to harvest enough seed to make the operation worth while, except as an experiment. The original strain of buffalo grass didn't hold its head high enough to be cut off efficiently by a harvesting machine. But, after years of selecting, the Federal-State agronomists have developed a long-culmed kind, known as the Hays variety. This strain, grown under irrigation the last 6 years, has averaged 400 pounds of seed an acre.

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GARDENING INFORMATION FOR HIGH WEST

The home vegetable gardeners in Wyoming, Colorado, and the higher parts of South Dakota, Nebraska, and Kansas have a good source of tested information in a new Farmers' Bulletin (F-2000), Home Vegetable Gardening in the Central and High Plains and Mountain Valleys. Based on studies by the U. S. Department of Agriculture, principally at its Cheyenne Horticultural Field Station, and further testing of varieties and practices of several of the State stations of the region, the bulletin contains detailed information on the adaptability of varieties of 50 kinds of vegetables to four different ranges of altitude from 2,000 feet to 7,000 feet.

One or more varieties of all the vegetables listed are rated by the authors as good or fair at altitudes from 2,000 to 6,000 feet. Between 6,000 and 7,000 feet many varieties of cabbage, celery, sweet corn, eggplant, okra, onion, sweet peppers, hot peppers, pumpkins, tomatoes, and watermelons are not suitable, and a few varieties are satisfactory. At this elevation pole beans of all kinds and bush limas are not satisfactory. At 7,000 feet and above, good and fair kinds include asparagus, beets, broccoli, cabbage (two varieties only), carrots, cauliflower, celery, chard, Chinese cabbage, collards, endive, horseradish, lettuce, mustard, onions, orach, parsley, peas, radishes, rhubarb, rutabagas, spinach, and turnips.

The bulletin is a gardening handbook for that area, including about 15 counties of northwestern Kansas, 25 counties of western Nebraska, 12 counties of southwestern South Dakota, and all of Colorado and Wyoming. It gives individual culture instructions for all 50 of the vegetables and has chapters on tillage and fertilization, irrigation, growing of seedlings, plant protection, and a discussion of special problems.

F-2000 may be obtained free from the U. S. Department of Agriculture, Washington 25, D. C.

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WEEKLY NEWS SERVICE

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United States Department of Agriculture

In all States

FARM-MORTGAGE TOTAL UP FROM YEAR AGO
--INCREASE IS WITH PRIVATE LENDERS

The farm-mortgage debt the first of this year, for the country as a whole, was larger by 4.6 percent than on January 1, 1948, and is up from the very low point reached early in 1946 by 9 percent, said ________________ (Extension official) in referring to the latest farm-mortgage report issued by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

"Farmers evidently have found uses for their income other than debt retirement--they have continued to replace worn-out equipment and to make necessary repairs and improvements at costs which are still relatively high," it was pointed out.

The farm-mortgage debt the first of this year totaled $5,108,000,000. This was up about 226 million dollars from a year earlier. The increase during the past year was more than double the increase in 1947.

Although a rise was shown for the country as a whole, five States, (Minnesota, North Dakota, South Dakota, Nebraska, and Illinois) continued to show a decline. The increase (decrease) during the past year for __________ (Your State) was ______* percent. And the increase (decrease) for this State since January 1, 1946, is __________** percent

The entire increase in United States farm-mortgage debt during 1948 occurred in the holdings of private lenders. Farm-mortgages held by insurance companies, commercial banks, and other private lenders increased, while holdings by the Federal land banks and other Government-supervised lenders declined, it was pointed out.

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* Fill in percentage from map on page 1 of attached report.
** Fill in percentage from map on page 3 of attached report.

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ARTIFICIAL INSEMINATION MAKING RAPID STRIDES

Artificial insemination of dairy cattle, recognized as one of the greatest production-improvement aids ever developed for owners of both small and large herds, is now operating in every State. Nearly two and one-half million cows are enrolled in artificial-breeding associations this year, the U. S. Department of Agriculture announced.

__________________ is listed by the Bureau of Dairy Industry as having
(Name State)
__________ artificial-breeding associations at the beginning of this year. These included ______ dairy herds with _____ cows enrolled for service. The number of sires in service in the associations was _____. (Note to editors: This paragraph may be completed from the table enclosed. It was compiled from reports submitted by State extension dairymen. If you used State figures in earlier release they may be worth repeating for comparison with other States.)

The report issued by the Bureau of Dairy Industry shows that almost 2,000 bulls are now giving service to 316,177 herds in 1,263 artificial-breeding associations throughout the Nation. The rapid growth of the program is shown by the increase over 1948 of 91,684, or 40.8 percent, in number of herds, and 668,833, or 38.4 percent, in number of cows.

Wisconsin, with 420,966 cows enrolled for service, is high State this year, and has led all States for nine consecutive years. New York is second with2 253,785. The next six in rank are: Pennsylvania, 195,090; Iowa, 176,646; Minnesota, 175,509; Ohio, 139,314; Illinois, 129,502; and Michigan, 120,550. Twelve other States have an enrollment of more than 25,000 cows.

Artificial insemination is the answer to the problem of spreading by mechanical means, the usefulness of outstanding bulls to large numbers of cows. For instance, natural service may produce 25 to 50 calves a year from one bull. By artificial means it has been possible to inseminate more than 10,000 cows in a year to a single bull. The supply of good proved sires necessary to a general improvement program is far too small to allow any great number of dairymen to get the services of such bulls by natural matings.

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For Extension Release -- all States

HOUSECLEANING TIME FOR GRAIN BINS

Good housekeeping—including a thorough housecleaning--is in order on every farm where grain will be stored within the next year. Any farmer who rates his wife a good housekeeper might very well ask her to come out and check up on the grain bins after he has done what he thinks is a good job. She may be able to point out ways of getting better results in protection of the grain from damage by insects that live over from crop to crop in cereal material that remains in emptied grain bins and start trouble when newly harvested grain is stored.

Insect damage is far more serious in the South than in the North, but even in the North the relatively simple job of housecleaning the grain bins adds considerably to the margin of safety in the storage of grain. An empty bin should be the signal for housecleaning. The earlier in the season it is done and the bins are sprayed the better, because in this way more of the hold-over insects remaining in the bins will be killed. In general, it is just before wheat and oat harvest that bins are most likely to be empty.

Clean bin insurance involves two stages — cleaning and spraying.

Physical cleaning of the emptied bin includes vigorous sweeping--scraping if needed--of walls and floor, not forgetting the corners. The sweeping should get rid of grain, meal, dust, debris, and dirt. In wooden bins sweep or brush along the line of cracks and crevices to get out as much as possible of the mealy dust and broken and spoiled grain. Steel bins should be caulked to make them more weatherproof. Roofs should be repaired, and wooden bins should be made as tight as possible to make later fumigations more effective if fumigation becomes necessary.

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The walls, ceilings, and floors of wooden bins, and cracks around the entrances of steel bins, should be sprayed after cleaning with one of the newer and highly effective insecticides. These not only kill insects that they reach, but leave a dry residue to kill insects that come out of cracks and move over the remaining particles. Sprays that have been found satisfactory for treating bins consist of 2.5 percent by weight of DDT, TDE, methoxychlor, or chlordane as emulsions or water suspensions, or an emulsion containing 1 percent by weight of piperonyl butoxide and 0.1 percent of pyrethrins. Use 2 gallons of spray for 1,000 square feet of surface.

At the same time any accumulations of grain, feed, bran, or screenings in and around bins and feed rooms should be scraped loose, swept up, and destroyed. The idea is to remove the insects and the materials in which they can breed that would otherwise be sources from which the newly harvested grain would become infested.

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United States Department of Agriculture

In Mont., Nev., Wyo.,
Colo., Idaho, Utah,
and Nebr.

YAMPA, SCAB-RESISTANT POTATO, IS PINCH HITTER

A scab-resistant potato is not a new thing, but the National Potato Breeding Program (carried on by the U. S. Department of Agriculture and State experiment stations) boasts one that has scab resistance and early maturity, a combination not only new but highly desirable for scab areas in Colorado and similar areas of relatively short-growing season. The new potato, called Yampa (Indian for Little Bear, and the name of a Colorado mountain valley), is the result of crossing a seedling on Katahdin, the first creation of the program and now one of the leading potatoes of the country.

Yampa was developed at the U. S. Potato Station, Greeley, Colo., by Dr. L. A. Schaal, pathologist, and W. C. Edmundson, horticulturist, of the Department, and R. Kunkel, horticulturist, of the State station. According to Dr. Frederick J. Stevenson, in charge of the national program, this is a "pinch hitter" potato for those high areas where scab is bad and the other scab-resistant varieties will not do well as they are all late maturing. It is a good yielder, of good cooking quality, but its major value is for scab resistance. It is a good example, says Stevenson, of the successful potato program efforts to fit high-yielding, disease-resistant varieties of productive, pleasing potatoes into all parts of the country--Maine, Minnesota, Colorado, Idaho, Florida, or any other State.

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(Note to Extension Editors: This item may be timely at various seasons in various States, depending on the chances for satisfactory growth of summer and fall planted lettuce. Consult your vegetable specialists regarding how much the chances are improved by the advent of Progress.)

PROGRESS LETTUCE BEST FOR SPROUTING IN HOT SOIL

Good lettuce that starts well in hot weather is, perhaps, one of the minor triumphs of the plant breeders, but it is an advantage to the producer--home garden or commercial. (The commercial lettuce crop in the United States is worth about $100 million a year.) The new Progress head lettuce, product of the U. S. Department of Agriculture's plant research, has this sprouting characteristic along with other desirable ones. The hot-weather germination factor, says Dr. Ross Thompson, in charge of lettuce breeding at the Department's Plant Industry Station, can be still further improved through breeding.

Work along this line for the past several years has shown wide variation among the well-known kinds. Grand Rapids is one of the hardest to germinate at high temperatures, a limitation on its season and locality. The old standard Iceberg is among those best able to germinate in heat, but it lacks certain other desirable qualities. Thompson finds that most varieties are intermediate between these two in ability to sprout in soil above 75° F.

Now, by their well-known "gene juggling," the geneticists are working the hereditary factors for this character into new strains intended to meet various requirements in addition. Tests of 8 varieties obtained from the 6 principal growers of lettuce seed covered germination temperatures from 80° to 85° F., a heat range very unfavorable to most of them. Seed of the new Progress variety, obtained from 5 growers, averaged 90 percent germination, with the lowest sample of this variety from any of the sources standing at 73.2 percent. This lowest Progress seed was almost as high as the best of any of the other varieties.

(More)

Dr. Thompson says that so far as the improvement work has gone now, in localities where Progress is adapted in other respects growers will do well to plant it--at least for that part of the crop started in periods of high soil temperature.

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United States Department of Agriculture

For Extension Release -- all States

FIVE BREEDS HEAD POULTRY PARADE

Paul B. Zumbro, of the U. S. Department of Agriculture, recently summarized the popularity of the various breeds of poultry as evidenced by the birds that make up the hatchery supply flocks registered under the National Poultry Improvement Plan.

For 1947-48, the last year for which figures are complete, New Hampshires were the leading variety, followed by White Leghorns, White Rocks, Barred Rocks, and Rhode Island Reds. The five leading varieties accounted for 82.7 percent of the birds. Of the remaining 17.3 percent, 4.8 were "other breeds and varieities" and 12.5 percent were cross mated.

Zumbro also reported that last year nearly half of all hatcheries--4,354 out of 9,341--participated in the National Poultry Improvement Plan. The egg capacity of the participating hatcheries was considerably more than half the total capacity--329 million out of 552 million.

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No. 1--Occurrence of Brucellosis in Cows, Hogs, and Goats:

Much more is known about the percentage of infection with brucellosis (Bang's disease) in cattle than about the prevalence of the disease among hogs and goats. This is because of 15 years' experience in blood-testing cattle under the State-Federal brucellosis eradication project, in which the Bureau of Animal Industry, U. S. Department of Agriculture, is cooperating.

In 1934, when concerted efforts were begun to eradicate the disease, it was estimated that about 12 percent of the cattle of the country were infected. From records based on blood samples taken widely under the State-Federal program in recent years, it is believed that approximately 5 percent of adult female cattle are now affected. Probably 80 percent of our cattle herds do not have it.

The range of infection runs from a low of less than 1 percent in North Carolina, the first State to be accredited, to 12 percent or over in two other States. Brucellosis seems to be almost as widespread in some of the range States, where beef cattle predominate, as it is in several of the larger dairy States.

Recognized shortcomings of the blood serum test for diagnosing the disease in individual swine hinders attempts to get anything like the same kind of data as that available for cattle. Preliminary surveys in the Midwest indicate that brucellosis infection is much lower than the 12 percent found originally in cattle An over-all estimate of 2 to 3 percent infection in swine is believed to be fairly reasonable.

(over)

Factual data on the incidence of brucellosis in goats are also inadequate. It is believed that the disease is largely, but not entirely, confined to the Southwestern States where the bulk of the goat population is found. A few years ago an undulant fever epidemic among Indians in New Mexico promptly ended when reacting goats were removed. The tests made incidental to this work revealed that 3 to 5 percent of original goat infection was reduced to half of 1 percent as a result of intensive test-and-slaughter.

Colorado began wide-scale goat testing for brucellosis a few years ago. Results covering the Colorado tests from 1944 through 1947 showed a decline from 7.7 percent to 1.3 percent reactors. From individual herd records it was found that two or three tests were usually sufficient to eliminate brucellosis completely from goat herds.

At present there are no routine or regular tests of swine or goats reported officially in the State-Federal eradication effort. It is confined entirely to records of monthly blood tests of cattle and calfhood vaccinations made in all the States.

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No. 2--Brucellosis Is Same as Undulant Fever in Man:

The same germ that causes brucellosis in livestock is responsible for undulant fever in man, and human beings rarely, if ever, get undulant fever from one another. Hence, infected animals are the chief source of infection by the brucellosis germ in man. Undulant fever has a low death rate, but it usually causes great discomfort and exhaustion and may become chronic.

There is strong evidence, according to scientists at the Animal Disease Station of the Bureau of Animal Industry, U. S. Department of Agriculture, that milk infected with the brucellosis organism is responsible for many cases of undulant fever, as the disease is very common among cattle, and considerable milk used in many parts of the country is not pasteurized.

Although undulant fever is often caused by the cattle type of brucellosis, say these scientists, the number of reported cases bears a small proportion to the number of people exposed through consuming raw, infected milk. Numerous reported cases have acquired the disease through contact with infected animals, especially swine.

The cattle type of brucellosis has been found so closely related to the similar germ causing the disease in goats and swine that they have been classified under the single term "brucella." Thus there are three closely related organisms, all of which may invade the udders of their hosts, and all of which at all times may cause undulant fever in man.

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No. 3--Note Ten Differences Between Swine and Cattle Brucellosis:

In general more is known by stockmen about the cattle type of brucellosis, or Bang's disease, than of the type that infects swine. Some of the ways in which the disease differs as between cattle and hogs may throw some light on the common problem.

Here are at least 10 broad differences, as seen by the Bureau of Animal Industry, U S. Department of Agriculture:

(1) Hogs of all ages may be naturally infected with the swine type of brucellosis. With cattle, it is mainly seen in sexually mature animals, calves being largely immune until they reach breeding age.

(2) Though infected sows and gilts are often involved in spreading brucellosis, the boar is probably a major means of infection at all times, whereas the bull is not considered nearly so guilty in spreading the disease among cows and heifers, at least through natural breeding. Studies of the risks involved in artificial insemination are being made.

(3) There are some evidences of cross-infection in both species, but as a rule swine and cattle are each more susceptible to their own specific type of brucellosis.

(4) Though both swine and bovine brucellosis germs attack persons who are susceptible, the bovine type is more prevalent in man than the swine type.

(5) In small herds of swine with a large and frequent turn-over, brucellosis has been deemed a self-limiting disease, the infection dropping from an acute stage and often being gradually eliminated. With cattle, where the life cycle is longer, there is seldom full recovery of badly infected cows, and the disease is usually chronic, with or without abortions occurring.

(over)

(6) Abortion is a frequent and common symptom of brucellosis in both species. However, sows that have aborted once will usually farrow normal litters thereafter, but they may harbor uterine infection. Cows usually abort once when infected, produce normal calves for 4 or 5 years, and then may abort again without further exposure. Yet their udders often remain infected throughout the period.

(7) The blood serum test conducted with standard equipment has proved highly accurate and effective in diagnosing brucellosis in cattle. It has no such comparable value with swine, however. Infected swine do not produce reactions in the blood serum to any extent as do infected cows.

(8) The blood serum test is used to detect individual infection in cattle. With swine the blood test has its most practical value when used as a herd test. Hence the test is recommended as a whole herd test for swine, and two tests made 30 to 60 days apart are recommended, with definite reaction determinations established. The blood test, plus evidence of abortion, weak litters or sterility, lameness or paralysis, gives proof of brucellosis in swine herds.

(9) Vaccination of calves with strain 19 vaccine has been reasonably successful in producing resistance to brucellosis, but no serviceable degree of resistance in swine can be obtained with strain 19 vaccine. To inject a swine type of live brucella vaccine instead might prove extremely hazardous to the animals, as well as dangerous to persons handling it. Hence vaccination thus far has not been safe or practical for use in plans to eradicate swine brucellosis.

(10) Testing the herd and slaughter of the reactors has been widely relied upon in eradicating cattle brucellosis, but test-and-slaughter has not been found effective against the disease in swine.

For commercial swine herds or small herds of swine, the recommended method is to dispose of the entire herd, clean and disinfect barns and premises, and get replacements from swine herds known by test and observation to be free of brucellosis. The method proposed for purebred swine herds is somewhat different, involving separation of negative young pigs from infected hogs and disposal of infected herds when marketable.

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No. 4--Vaccination Only One Road to Brucellosis Control:

Steadily increased use of the approved strain 19 vaccine to establish serviceable resistance in calves against exposure to germs of brucellosis is noted since 1940, with the number of calfhood vaccinations in the current fiscal year at the highest volume recorded.

In the 1947 fiscal year more than 900,000 calves were vaccinated under the State-Federal brucellosis (Bang's disease) eradication program. This was increased to 1,159,000 in the 1948 fiscal year. For the 11 months ending May 31, 1949, further gains are seen in this phase of the work, with 1,448,575 calf vaccinations recorded. Throughout the entire period since January 1941, when vaccination became part of the national eradication procedure, and up to June 1 this year the record shows that 6,731,705 calves were officially vaccinated with strain 19 vaccine.

Such official records of calf vaccinations do not include what is believed to be fully as many animals that were vaccinated either as calves or adult animals outside of the regular supervised program, say the State-Federal officials. Caution should be raised against too great reliance upon calf vaccination alone as a means of eliminating the disease. The resistance vaccination provides is not always 100 percent effective. Because its effect is not absolute at all times, its best value cannot be realized without proper sanitation on the farm and good herd management. Although strain 19 when used in a suitable way can be relied upon to provide relatively strong resistance in most calves against moderate exposures to the disease, its general use as a substitute for good sanitation or care in buying replacements is not sound. The object is to eradicate, not merely to tolerate, brucellosis.

(Over)

Where calfhood vaccination is practiced it is often advisable to retain infected animals in the herd until they can be replaced with the vaccinated stock raised on the premises. In such cases, authorities in State-Federal work advise, it is highly important that adult reactors be permanently identified so that they can be eliminated first from the herd.

Under normal practices this plan would see a complete turn-over of the herd within a maximum of 5 years. During this interval there will be a natural swing taking place each year in favor of the vaccinates, it is pointed out. As they mature and take the places of known infected adult cattle, the degree of exposure from within the herd will become much lower. But until the original herd is completely replaced, the whole unit may be regarded as infected, with careful sanitary precautions recommended. Buying cattle only from clean herds is an essential precaution.

The Bureau of Animal Industry says that every effort is being made to manufacture a potent vaccine, through constant supervision. Yet until everyone recognizes that improperly preserved vaccine will be disappointing, there will be questions raised about "failures" in this phase of brucellosis eradication.

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No. 5--Vaccination of Mature Cattle Against Brucellosis Has Drawbacks

Although vaccination of cattle of breeding age with strain 19 vaccine against brucellosis (Bang's disease) has become common and widespread, it has decided limits and some serious practical drawbacks, according to advice to Extension Service from State-Federal supervisors of livestock disease control.

Use of brucellosis vaccine on animals of breeding age is most valuable at the beginning of sever "storms" of abortion in a herd. Existing standard plans for brucellosis eradication include adult vaccination in emergency cases, but only when prior notice of such intention is given in writing to the State control officer.

Adult cattle vaccination may be expected to have the following pattern, say authorities:

(1) Creates blood test reactions which tend to persist for many months or even for the entire life of the animal vaccinated.

(2) Produces a mild bodily reaction with temporary reduction in milk flow and an occasional abscess.

(3) Reactions caused by vaccination cannot be told from those that cattle show after normal exposure to brucellosis. This is confusing to the herd owner or the buyer of breeding cattle and may prohibit interstate movement.

(4) Produces abortion in a few pregnant cows, but vaccination is not the cause of permanent infection in cows.

(5) May be in conflict with the objectives of boards of health, which desire to prevent infection of persons with the human type, undulant fever. This is because raw milk from all reactors, vaccinated or not, presents some danger to man.

(Over)

Authorities recognize that the resistance induced in healthy adult cattle by vaccination is probably equal to that produced in calves vaccinated at 6 to 8 months. As used in herds where infection is severe, vaccination often fails because numbers of the herd have already been exposed and permanently infected before the treatment can offer any added protection, according to scientists of the Bureau of Animal Industry, U. S. Department of Agriculture. Relied upon in such cases, adult vaccination may have little effect in halting the disease, authorities point out.

Instead of using vaccination, owners of clean herds should rely upon frequent blood tests, sanitary methods of herd management, the purchase of replacements from known clean herds, and the utmost care in preventing the introduction of disease by other means.

Since only 20 percent of the herds in the country are said to carry the infection, the first responsibility of all concerned is to protect the clean condition of herds and to subject more herds to the test.

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No. 6--Few Cows Recover, None Are Cured of Brucellosis:

During the educational effort in behalf of brucellosis eradication, the Agricultural Extension Service has often been asked two leading questions about the disease, among many others constantly arising:

(1) Do cattle recover from brucellosis? (2) What percentage of infected cows abort more than once?

In reply to the first question, authorities in the Bureau of Animal Industry, U. S. Department of Agriculture, say: "Although some brucella-infected cattle may overcome the disease spontaneously, the number of such cases--possibly 10 percent--is far too low to consider in a positive control program. Generally speaking, experience shows that brucellosis in cattle, unlike undulant fever in man, becomes chronic or permanently established."

As to the second query, the Bureau's experience is that among the cows which abort once as a result of brucellosis infection, only about 10 percent will do so a second time, even though they remain infected and constitute a hazard as spreaders. It has been observed that infected cows may abort once, produce normal calves for 4 to 5 years, and then abort again without further exposure to infection.

This typical behavior induces many stockmen to believe that they have obtained relief from abortion by using supposed remedies. As yet,no specific cure has been found for brucellosis in animals, although progress is rapidly being made in the use of antibiotics (such as aureomycin) to cure undulant fever, the human form of brucellosis.

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No. 7--Role of the Bull in Brucellosis Infection:

Cattlemen engaged in the eradication of brucellosis by using a plan of their own choice under official State-Federal supervision have often asked if the herd sire is a real factor in the spread of the disease.

The answer is supplied by Dr. C. K. Mingle, tuberculosis eradication division, Bureau of Animal Industry, U. S. Department of Agriculture:

"Although bulls occasionally become infected in the genital tract, they are not frequently responsible for the transmission of brucellosis. However, although the danger of bulls becoming infected carriers is remote, the fact that they are not always resistant emphasises the need for considering them as potential sources of infection."

With growing use of strain 19 vaccine in providing reasonable resistance to brucellosis in calves, it has been asked whether or not bull calves should be vaccinated along with the young heifers intended for herd replacements.

Dr. Mingle replies that there is little or no need to vaccinate bull calves because of the normal resistance of bulls to the germs of brucellosis.

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No. 8--Two Questions Answered on Calfhood Vaccination:

What is the duration of resistance to brucellosis set up in calves that have been vaccinated at 6 to 8 months of age with strain 19 vaccine? Are vaccinated calves dangerous to unvaccinated animals, and should they be isolated from the infected herd?

These two common questions relative to the increasingly popular step toward brucellosis eradication by means of calfhood vaccination have been answered by supervisors engaged in State-Federal control of this serious livestock and human disease, as follows:

Owing to variations in the severity of exposure and the individual reactions of calves to vaccination, it is impossible to forecast safely the time limit of such resistance under differing herd conditions. Many repeated experiments have shown resistance for as long as 4 or 5 years after vaccination.

There is no proof that vaccination with strain 19 vaccine will establish brucellosis in vaccinated animals, or that they will transmit the disease organisms to susceptible animals with which they come into contact. No special handling beyond that used in good herd management is necessary for vaccinated calves in either infected or clean herds.

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No. 9--Summing Up Against Brucellosis:

With the organized livestock forces of the United States lined up in a concerted effort to eradicate brucellosis (Bang's disease of cattle) there are a few outstanding points which form the general objective.

(1) Infection with brucellosis can be eliminated from our entire livestock population if available means are utilized together to best advantage.

(2) Brucellosis is a disease in which the main reservoir of infection to both man and animals is found in domestic livestock. Human beings rarely transmit it among themselves. This presents a twofold objective to stockmen: (1) Reduction of economic losses to the livestock industry and (2) elimination of a serious threat to public health and welfare.

(3) Although brucellosis is most widespread in cattle, the goal of the eradication effort must include elimination of the disease from other susceptible species, such as swine, goats, and sheep.

(4) Although neither test-and-slaughter nor vaccination alone will effectively meet all conditions, a program including both of these procedures can be made flexible enough to eradicate brucellosis from any herd.

(5) The value of calf vaccination is not restricted to infected herds. This practice involves equal or greater benefits in the protection it can afford to highly susceptible clean herds. When we prevent the spread of the disease from infected to clean or negative herds, the hardest part of the task is done.

(6) Vaccination must not be accepted as a substitute for good sanitation and herd management. Its greatest value is realized only when these principles are rigidly observed.

Since organized effort by all agencies allied in unified methods has largely eliminated cattle-fever tick and bovine tuberculosis, it is possible for the livestock industry, the veterinary profession, and public health agencies to be as successful in brucellosis eradication.

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In All States

TURKEY FOR FRYING IS POULTRY SPECIALTY

Growing turkey broilers to supply fried turkey as a sort of glorified fried chicken is coming forward as a promising poultry specialty. These young turkeys also have been favorably received as small roasters. The breeding of the Beltsville White and Jersey Buff turkeys seems to be an element in the better outlook for turkey broiler growing. A principal point in favor of turkey broiler production is that it takes only about 2.8 pounds of mash and grain feed to produce a pound of turkey meat at broiler age, as compared with 3-3/4 pounds to 4 pounds of feed to a pound of chicken broiler meat, according to S. J. Marsden, U. S. Department of Agriculture turkey specialist at the Agricultural Research Center.

Offsetting this saving in feed is the somewhat higher poult cost of turkeys. Indications are, says Marsden, that turkey broilers would have to sell for about 4 cents a pound more at the broiler stage to make as good a return as chickens. Turkeys reach the broiler or fryer stage about 2 weeks earlier than chickens, and the desirable turkey broiler is larger than the chicken broiler--4½ pounds to 7 pounds for turkeys, as compared with 3½ pounds for chickens on a live weight basis.

A thoroughly practical point in favor of broiler production by turkey growers, says Marsden, is that it would give the turkey grower an opportunity to get extra use of his brooding equipment without the danger of mixing chicken and turkey diseases that there is if the turkey grower raises chicken broilers in what is mainly a turkey business. The Beltsville Small White breed is

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exceptional among turkeys for its relatively quick maturity combined with excellent meat conformation, including plenty of breast meat. It also ranks high in length of laying season, number of eggs produced, and their hatchability. This would also favor broiler production from eggs laid too early or too late for hatching for the regular crop.

Marsden says there have been previous attempts in the direction of turkey broiler production, but the dark-feathered breeds of turkeys grow rather too large to be practical for the purpose, have conspicuous pin feathers, develop practically no finish at fryer age, and the poults generally are higher priced. The Beltsville Whites seem to be about right, and their over-all advantages give them some advantage over the other varieties and strains. They are now produced in commercial quantities.

Some experiment station work in earlier years indicated that the turkey fryer had a moderate advantage over the chicken fryer in the percentage of breast meat. The Bureau of Animal Industry is now making a study of this factor, comparing the dressing weights and breast meat of several breeds of turkeys and chickens.

Several Virginia growers have been doing well with turkey broilers, but they have the benefit of a special cooperative marketing arrangement that allows them a substantial premium over the price for chicken broilers. If the turkey broiler production becomes widespread, says Marsden, broiler prices will have to be figured at about on a par with chicken broilers, with perhaps a small premium in favor of turkeys because of the higher proportion of breast meat.

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In All States

BREEDING STILL BETTER POTATOES

Two bushels of potatoes grow today in the United States on the same area as grew one bushel 25 years ago. Various factors entered into this increase in yield: Certified seed relatively free of disease; concentration of the crop in areas most favorable to it; effective control of insects; and the development of improved varieties. Dr. Frederick J. Stevenson, U. S. Department of Agriculture potato breeder at the Plant Industry Station, Beltsville, Md., thinks the adoption of improved varieties is one of the most important reasons for the improving production.

Stevenson does not project developments for the next 25 years, but he offers figures assembled by the Bureau of Agricultural Economics and others which he regards as significant. He points out that the National Potato Breeding Program,--carried on by the Plant Industry Station and many State experiment stations--is turning out each year additional new varieties better suited to certain areas. The lists of certified potato seed for 1948 contained 51 varieties, 20 of them old ones brought out during the 50 years preceding 1900 and 31 distributed to growers in the last 17 years. The 20 old potatoes still are represented by more than half of the certified seed sold; the new varieties, nearly all with North American Indian names and with high yield and disease-resistance characters, since 1932 have worked up to 44 percent of the certified seed supply.

The old varieties in the order of their share of certified seed production are: Irish Cobbler, Triumph, White Rose, Russet Burbank, and Green Mountain, followed by a dozen more; tops of the new ones on the same basis are Katahdin, Chippewa, and Sebago, followed by 28, many less than 5 years old. Although the new ones are credited with less than half of the certified seed, Katahdin, first issue of the Breeding Program and head of the group, is credited with nearly twice as much seed stock as Irish Cobbler, the leader of the old-timers.

Dr. Stevenson says that "the results indicate continuing possibilities in breeding" and "we now have available many characters not yet combined in one variety, and each new combination should give us a new variety more valuable to some of the growers than any we now have."

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In Fla., Ga., N. C.,
S. C., Ala., Tenn., La.,
Miss., Ark., and Texas

NEW CHANCE CROSS HYBRID MILLET IS LATE GRAZER, HIGH YIELDER

Efforts to produce a hybrid pearl millet of high production and long-season grazing for the Southeast, according to the U. S. Department of Agriculture and the Georgia Experiment Station, are about to be labeled successful. Pearl millet has long been a popular grazing crop in the region, but there has been need not only for higher-yielding strains but for strains that will produce an abundance of grazing over a long season, rather than taper off to almost nothing when other grazing crops are also about done growing.

According to Dr. Glenn W. Burton, of the Bureau of Plant Industry, Soils, and Agricultural Engineering, working at Tifton, Ga., certain hybrids are proving much more productive than commercial pearl millet. These are produced by uncontrolled crosses of inbreds rather than by controlled crossing, as in the case of corn where one side of the cross is detasseled.

Dr. Burton reports an outstanding hybrid that yields twice as much as the kind commonly grown in the region. This was produced by crossing their best early hibrid on a late-type hybrid. Where the experimenters got 203.8 pounds from the old one, the hybrid on the same size plot gave them 441.5 pounds. And here is an important point to the farmer who wants uniform grazing over a long period: In cutting the old variety they got 62 percent of its total on June 22, 31 percent on July 23, and 7 percent on October 2. On the other hand, the hybrid was almost as fresh and vigorous in the fall as in June. It yielded 37 percent June 22, 28 percent July 23, and 35 percent October 2. Similar results were obtained in 1947.

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Dr. Burton says they are working on the basis of economical production of commercial hybrid seed by harvesting all the seed from a field planted to a mixture of seed of two or more inbred lines. Tests of this idea have already proved, he says, that a cross handled this way will yield as well as a strictly controlled cross using the same inbred lines. (Hybrid seed corn, on the other hand, is produced by growing the so-called F_1 hybrids together, but detasseling one of them to insure that the seed on the detasseled stalks will all be hybrid. In this system the corn on the pollen-bearing stalks will be inbred seed.)

Tests have been continuing, and one seed grower is preparing to produce foundation seed under supervision of the Georgia Coastal Plain Experiment Station. But so far there is no seed available for use on farms of the Southeast.

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In All States

BEEF CATTLE RESEARCH WORK DISCUSSED AT MILES CITY FIELD DAY

Methods of producing more and better beef cattle were discussed by research workers from thirty-eight States at the U. S. Range Livestock Experiment Station at Miles City, Mont., July 7. The station is conducted cooperatively by the Montana Experiment Station and the U. S. Bureau of Animal Industry.

The visitors attending the field day toured the station's pastures where record of performance studies with beef cattle have been conducted for nearly 25 years under range conditions. Young bulls are being proved by the study of all calves from five selected lines or families, selected for rapid growth and good carcass quality. The tour was conducted by Clyde McKee, director of the Montana Agricultural Experiment Station, and Robert Clark and J. R. Quesenberry, of the station.

Three regional technical committees compared notes on progress of the Research and Marketing Act for Southern, North Central, and Western regions. They reported some 132 lines now under record of performance tests representing Hereford, Shorthorn, Angus, and Brahman breeds. A review of each region's progress was presented by Dr. Louis Madsen, Utah, for Western, Dr. Leslie Johnson, South Dakota, for North Central, and Dr. Charles Hobbs, Tennessee, for Southern. Technical problems of evaluating meat quality, using body measurements as indices, methods and systems of measuring record of performance, and ways and means of establishing lines of breeding also were discussed.

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In All States

SUMMER COMFORT FAVORS EGG LAYING

Poultrymen who manage to keep their laying hens comfortable in hot weather can expect to profit by continuing egg production in summer when prices are higher than in the spring, according to U. S. Department of Agriculture records. They show that, for a 10-year period before and during the war, egg prices to farmers averaged more than 5 cents a dozen higher in August than in April. Last year the average lay per hen was 18.1 eggs in April and only 13.7 in August.

Most poultrymen expect laying to fall off in summer. Poultry nutrition specialists of the Bureau of Animal Industry say that many poultrymen make the mistake of cutting down on the grain ration to summer layers. This has the result of supplying less feed but feed of high protein content. Protein in the summer diet is a heating feed, and layers cut down on the quantity they eat. In the very hot summer weather in Arizona, Department experimenters found, there were more deaths among hens fed diets moderately high in protein (low grain diets) than among hens fed standard diets or diets low in protein (high grain diets.)

Summer comfort for layers keeps them eating--and laying. Poultry specialists emphasize various aids for summer comfort. Laying houses that are closed in winter should be convertible to open front in summer, and windows and ventilators should be provided and kept adjusted to keep the houses as cool as possible. They also emphasize the summer egg-laying value of a shaded yard--with or without pasture. Good green pasture in a yard can save up to 10 percent of the feed. The shade may be from trees or as roofed shelters open on all sides. But layers, he said, should not be allowed to range far from the feed hoppers where they can eat--and then lay. Water, too, should be in ample supply and kept as cool as may be.

The nearer the summer environment can be kept to the comfort of the spring environment, the nearer the layers will come to eating and laying in summer as they do in spring.

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In All States

SHRUBBY FENCE ROWS BETTER THAN CLEAN ONES

Mowing weed-grown fence rows and borders of roads is a hot summer chore which the Soil Conservation Service of the U. S. Department of Agriculture says can just as well be avoided by planting these areas to perennial shrubs and other plants that control erosion and provide food and cover for wildlife. And after such attractive and beneficial plantings are established, the conservation biologists and foresters point out, it is easier to take care of them than it is even to go to the bother and expense of spraying weedy fence rows every year with 2,4-D or other new chemical weed killers.

In fact, they caution against that temptingly easy short-cut way of dealing with the bothersome fence-row problem: First, the farmer or highway maintenance crew has to do the job over every year or oftener. Second, spraying to kill off all vegetation and leaving the fence rows, road banks, and borrow pits practically bare through the fall-to-spring months of rain and snow, invites serious erosion and silting up of adjacent field areas, roads, and culverts. T Third, it destroys one of the few remaining living spaces for beneficial birds and other wildlife in settled country.

The recommendations of the conservationists boil down to this: Use 2,4-D or other chemicals for weed eradication in fields, and in some cases on pastures or range land, where they are highly effective and economical. Establish desirable shrubs and other perennial plants, including fruit-bearing species to supply food for wildlife in the fence rows and along the roads. Such shrubby plantings also help keep troublesome snow from drifting off open fields onto the road--when winter winds blow again.

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In All States

COSTS OF GOOD POULTRY FEED LOWERED BY SYNTHETIC VITAMIN

Better poultry feeds at lower cost should result from the recent appearance on the market of vitamin B_{12} concentrates, also called A P F concentrates, says H. R. Bird, U. S. Department of Agriculture. He is in charge of poultry investigations at the Agricultural Research Center, Beltsville, Md.

He points out that until recently the only "good" sources of this vitamin among feedstuffs were fish meal, fish solubles, liver meal, and crab meal. Meat meal is a "fair" source. Total supply of vitamin B_{12} from these sources was inadequate to meet the needs of growing birds and of broilers, both of which have a critical requirement for this vitamin.

Experiments at Beltsville have shown, says Dr. Bird, that a chick diet composed of grains, soybean meal, alfalfa meal, fish meal, fermentation solubles, vitamin D supplement, and mineral supplements can be modified by replacing all the fish meal with B_{12} concentrate and soybean meal and that chicks will grow as well on the modified diet as on the original. However, Dr. Bird does not recommend that feed manufacturers or poultrymen eliminate all of the animal protein supplements from their formulas. He says that much more information is needed concerning interrelationships between vitamin B_{12} and other nutrients and concerning essential nutrients that may yet remain unknown.

In mashes that are well fortified with animal protein supplements, partial replacement of these supplements by B_{12} concentrate and soybean meal is justified. In making such a substitution, the question always arises as to the vitamin B_{12}

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potency of the animal protein supplements being replaced. This question is answered, at least in part, by a report presented by R. J. Lillie, C. A. Denton, and H. R. Bird, of the Bureau of Animal Industry, at the annual meeting of the Poultry Science Association at Guelph, Ontario, August 1 to 4. By means of a chick growth test, the vitamin B_{12} potency of several feedstuffs, expressed in micrograms of vitamin per gram of feedstuff, was found to be as follows: Fish meal 0.24, crab meal 0.33, meat and bone meal 0.08, liver meal 0.52, fish solubles (2 commercial brands) 0.78 and 1.02. Future improvements in methods of determining vitamin B_{12} will undoubtedly require some revision of these figures, says Dr. Bird, but they are accurate enough to serve as a guide in revising mash formulas.

It is recommended that when a partial replacement of animal protein supplements is made, there be left in the diet of starting chicks, broilers, or breeders at least 40 pounds of fish meal per ton or at least 120 pounds of meat meal per ton.

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In Cotton States

PLOUGH UNDER COTTON STALKS TO CONTROL WEEVIL

The upsurge of boll weevils in many parts of the Cotton Belt this season emphasizes the urgent need for cotton growers to plow under the cotton stalks as early as possible. As soon as the cotton is picked, growers should destroy the stalks--the earlier the better. Early destruction of stalks by individual growers is worth while. Community-wide or county-wide destruction is still better, says the U. S. Department of Agriculture. Destruction at any time before frost is profitable but the earlier it is done the better.

Ploughing under the stalks early is the oldest dependable method for control of the boll weevil, says R. W. Harned, of the Bureau of Entomology and Plant Quarantine. And it remains one of the best. Experience in Texas in the fight against the pink bollworm has emphasized its value also against the boll weevil. State regulations require growers in certain areas to destroy their cotton stalks early. This has made possible a clear check of the effectiveness of the plow-under in controlling weevils. When weather permits an early, thorough clean-up, the experience has been that there are few surviving boll weevils the following season. In 1946, for example, when planters in the lower Rio Grande Valley area finished the clean-up early in August, an average of only 3 percent of the squares were punctured the following June. With bad weather delaying the clean-up in 1947 until September 13, more than 20 percent of the squares were punctured in June 1948.

Near the Gulf coast and as far as 200 miles from the coast, many cottonfields can be--and should be--harvested in August and the stalks turned under promptly. Farther north, the clean-up may have to be delayed until September or early

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October. It is worth while, says Harned, to destroy the stalks at any time before frost--even a few days before frost may be worth the effort.

Harned mentions as an evidence of the practical value of this method, the fact that one of the largest cottonseed-growing firms in the Cotton Belt has "conscientiously followed" this clean-up policy for years.

With boll weevils so abundant and widespread in 1949, the importance of early and thorough clean-ups by individuals and by communities is emphasized. It is one of the most practical, effective, and economical ways of checking weevil injury to the 1950 cotton crop in some areas.

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MANY FARMERS USE "NON-PIPED" GAS

Roughly a fourth of the farmers in the United States now use liquefied (non-piped) petroleum gases for cooking, home and water heating, refrigeration, or other purposes, says ____________________ (Extension Official). Outside city limits few homes get gas from a pipe line. More and more rural homes are using petroleum gases--butane, propane, or a mixture of the two--delivered to the farms in steel cylinders or in tank trucks, he says.

"Farmers who obtain these gases from tank trucks have storage tanks usually ranging from 100 to 1,000 gallons in size," Mr. ________________ points out, calling attention to a recent Bureau of Agricultural Economics field survey. An account of the survey, entitled "Gas Beyond the City Main," is found in the August *Agricultural Situation*, a BAE monthly publication.

Close to the source of supply the cost of this LP-gas is lower than elsewhere. In the Southwest some bulk users are now paying less than 10 cents a gallon, as compared with 30 to 50 cents in more northern areas where farmers buy in replaceable cylinders. In many areas of the Central Plains and in the South from the Mississippi Delta to the west coast, where the cost is relatively low, many farm homes are now heated with LP-gas.

LP-gas is also used for heating water in dairy farms, for gas brooders, for flame weeders, for dehydrating purposes, and, to some extent, for curing tobacco in the Southeast.

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In All States

DUTCH GRASS WORTHY OF FERTILIZER

Dutch farmers think so highly of grasses as farm crops that they fertilize them heavily with commercial fertilizer. Their clover, alfalfa, and other forage legumes do not occupy the important positions in cropping plans of the Dutch dairy farmer that they do here, according to Dr. W. W. Myers, U. S. Department of Agriculture agronomist in charge of forage crops research at the Plant Industry Station, Beltsville, Md. Back from attending the Fifth International Grassland Congress at Noordwijk, Holland, he mentioned this lack of interest in legumes as a matter that must be explained here in view of the emphasis placed by the United States farmers--particularly meat and milk producers--on growing of these nitrogen-gathering crops.

"The Dutch farmers," Myers says, "consider that grasses alone, heavily fed with nitrate fertilizer, bring higher returns in digestible nutrients than legumes or mixtures of legumes and grasses that catch and fix nitrogen from the air. They often give their pasture and hay crops 600 to 700 pounds of nitrate of soda to the acre."

Many American farmers have found legumes a most economical crop, Myers says. But, he says, it seems probable that the viewpoint of the Dutch farmers has real merit considering the heavy demands on agriculture there. The need for maximum yields per acre is great because of limited acreage and large population. "So they are more concerned with production itself than with economy of production." In the United States, with land more abundant, he says, we can be satisfied with less per acre in the interest of the lower cost when legumes supply the nitrogen.

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United States Department of Agriculture

In All States

FOR PASTURE RENOVATION, REMEMBER NOVEMBER

In giving new life to old pastures, an important extra inducement for doing the renovating, says R. E. Wagner, agronomist of the Plant Industry Station, U. S. Department of Agriculture, is the opportunity to use "slack season" time for the work. In many sections, he says, such work may be started in late fall and completed in early spring, and the benefits realized by midsummer, even of the first year.

Experiments conducted cooperatively between the Bureau of Plant Industry, Soils, and Agricultural Engineering and the Bureau of Dairy Industry at the Department's Agricultural Research Center, Beltsville, Md., as well as in other parts of the North and East, indicate that November (when practically all harvest work has been finished) is a good time to start in by manuring and liming the old pasture and then tearing up the sod with a disk harrow. In tests at the Agricultural Research Center, the shreds of sod along with the coarser parts of the manure (left on the surface as a result of disking and no plowing) served to hold snow and slow erosion. In March the experimenters (forage crop and dairy specialists) broadcast 500 pounds to the acre of a phosphorus-potash fertilizer (0-14-7), double-disked and harrowed the land, and reseeded it with a mixture of bromegrass, alfalfa, red clover, and Ladino clover.

This treatment worked out well. After a somewhat weedy first growth cut for silage in May, this mixture provided much more feed in late summer and fall than did similarly fertilized pasture that had not undergone the rending treatment that pasture men now generally call renovation.

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"This experience," Wagner says, "is merely an illustration of how the plan may be worked out in periods when time is not so hard to find, and when such work should really be done anyhow for best results. Suitable mixtures must be selected on the basis of advice of State experiment stations and in the light of local experience, but a good bet for most of the Northeast is a mixture of orchard grass and Ladino clover."

"A high percentage of permanent pastures need renovation," Wagner says. "You don't need to lose much production in this conversion from run-down pastures directly to improved pastures. The first year there may be some reduction in total pasture yield, but production in the crucial months of July and August will be greater--and that is when good grass makes farmers (especially dairy farmers) think of folding money. For a number of years following renovation, the farmer who does the job well can be reasonably sure of: (1) Better summer production (with fewer weeds), (2) earlier spring pasture, (3) sometimes later fall pasture, and (4) more feed of better quality all the time."

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MANY APPLE BRUISES COME FROM PACKING LINE

Serious bruising in apples may occur after the fruit is brought to the packing line.

This is shown in a study to find the extent of fruit injury in picking and packing conducted this past year at Wenatchee, Wash. by Edwin Smith, David Adams, and T. R Wright, plant scientists of the U. S. Department of Agriculture. The work was done under the Research and Marketing Act of 1946.

The plant scientists used medium-sized apples of the Delicious variety for the packing study because this variety is highly susceptible to bruising. They had been picked with exceptional care.

The findings indicate that bruises occur all along the packing line but the greatest number take place at three danger points:

(1) Dumping, either mechanically or by hand. A tall worker who flipped the fruit on the dumping table belt caused 12 severe bruises per 100 apples as against 2 for a more careful worker. Apples dumped into a water bath showed fewer bruises than those carefully dumped on a canvas belt as it passed over a solid surface.

(2) Drops when the apples were moved from one level to another for different operations or when the fruit was carried on endless conveyors. The newer machines with dumping table and washer progressor on the same level caused fewer bruises than old-type machines.

(3) Hits on the edges of the distributing roll and the metal frames of sizing cups as the result of faulty adjustment and operation of sizing equipment. The plant scientists pointed out that it was extremely important to have the three moving parts of weight-type graders accurately timed.

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United States Department of Agriculture

In All States

APPLE GROWERS CAN REDUCE BRUISING DURING PICKING AND HAULING

Apple growers can reduce losses caused from bruising of apples during picking and hauling by close supervision of picking operations and by handling apple boxes on pallets. This was revealed in a recent U. S. Department of Agriculture investigation of apple bruising at Wenatchee, Wash., under the Research and Marketing Act of 1946.

Work of picking crews was evaluated in typical orchards of Delicious, Richared, and Starking varieties to determine the degree of injury caused by picking. Extreme differences in the number of picking bruises were observed. Where excessive bruising was found, picking supervision was inadequate. Where pickers were given close supervision, injury from bruising was low. Picking bruises were notably low in apples from orchards when prompt reports on injury were made from a packing house where a checker inspected samples of every load of apples delivered.

Injury resulting from hauling and handling apples in individual boxes and on pallets was compared. (Pallets are wooden platforms on which 24 or 30 boxes of apples are placed for mechanized handling.) With average handling of apples on pallets there was only 19 percent as much bruising as when the boxes were handled separately. The extent of bruising with either method of handling, however, was found related to care in handling.

Bruises incurred during the storage of loose fruit was found to be less when apples were handled on pallets. The handling of palletized boxes of loose fruit during receiving, stacking in cold storage, and delivery to the packing line later in the season resulted in only 61 percent as many bruises as when individual boxes were handled.

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United States Department of Agriculture

In All States

RELEASE SEPT. 21 a.m.

BAE REPORTS DECLINE IN LAND VALUES

Dollar values of farm land in the United States are down 2 percent from March and 1 percent from a year ago, according to the Bureau of Agricultural Economics, U. S. Department of Agriculture.

Though still more than double the 1935-39 average, land values for the country as a whole, as of July 1, averaged about 3 percent below the high peak reached in November 1948. This information is reported in BAE's "Current Developments in the Farm Real Estate Market." This report indicates changes in values which took place during the 4-month period ending July 1.

Small declines took place in most sections of the country. And for the first time since 1939 the national index has dropped below the previous year. Values continued to increase in only 6 States during the March-July period, the gains in those States averaging only 1 percent. In 5 other States values remained unchanged. Elsewhere, the declines were small. Only 5 States showed a drop of 5 percent or more. In ________________ (Your State), there was a decrease or increase--see attached map of ____________ percent during the 4-month period.

The report further indicates that the sale of farms is slowing down. About 17 percent fewer farms changed hands during the year ending this March than during the previous year; and about 29 percent fewer farms than during the year of peak sales ending March 1, 1947. During 1946-47, the year of peak sales, farms were sold at the rate of about 58 per 1,000. During 1947-48 the rate dropped to 49 farms per 1,000. And during 1948-49, the rate of sale dropped to 41 farms out of each 1,000.

(Glossy prints of this map may be had upon request to Division of Economic Information, BAE, USDA, Washington 25, D. C.

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United States Department of Agriculture

In Ohio, Mich., Nebr.,
Mont., Idaho, Wyo., Colo.,
Utah, and Calif.

PROMPT STORAGE AFTER HARVEST SAVES BEETS

More rapid harvesting of sugar beets through the use of mechanical digging and loading equipment is a potent safeguard against heavy loss and decay of beets in storage, usually caused by undue delay between harvesting and delivery to receiving stations. This fact is emphasized in recent findings by workers in the Division of Sugar Plant Investigations, U. S. Department of Agriculture, at the Fort Collins, Colo., field station.

The extent to which sugar losses from the beets can be checked while the beets are under prolonged storage depends, the Department workers say, on better control of the natural respiration process as well as the rotting of tissues caused by microorganisms. The latter process in turn also raises the temperature in beet piles and multiplies the chances for severe loss.

Both types of storage loss are largely dependent upon the quality of the beet roots that enter storage, as well as upon the temperature and condition of the storages. Crispness of newly harvested beets is a factor which it is desirable to retain because wilting of the roots sets the stage for rapid deterioration. Wilted roots, it is found, not only respire more rapidly than crisp roots, with consequent sugar losses; but they also tend to be squeezed together more tightly to cause greater sugar loss and heating; and likewise suffer more readily from attacks by fungi.

Storage experiments by the Department specialists show very little rot after storage of 3 months for beets dried for one-half hour on a sunny day.

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Progressively greater losses were found for longer periods of exposure. Roots left unprotected for 4 days showed a loss of more than 15 percent of the initial weight, and after storage the amount of rotten tissue was found to be 8 times as much as for roots exposed for one-half hour. Thus, beets allowed to wilt in the field after digging will show a very distinct reduction in acre yield of roots, and if put into storage they will rapidly deteriorate owing to rot by microorganisms and abnormal rate of respiration.

Hence the conclusion is that delivery of crisp, fresh beets to storage places is a profitable form of insurance for grower and processor against serious injury resulting from depositing "rubbery," wilted beets in dumps or factory piles to await processing.

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In All States

LONGER HARVEST PERIOD IS POSSIBLE FOR INDUSTRIAL-TYPE SWEETPOTATOES

Although the best time for harvesting sweetpotatoes to be used for starch manufacture and livestock feed is before or immediately after the first killing frost, roots for these purposes can be harvested 2 to 5 weeks after frost, according to findings of the U. S. Department of Agriculture in experiments carried on cooperatively in Mississippi, Louisiana, and Texas. This makes possible a longer supply period for the starch or feed manufacturers, and cuts down a labor peak for the grower. With table varieties, harvesting should not be delayed, but should occur before or immediately after frost, as eating qualities are affected.

In the case of sweetpotatoes for industrial use or livestock feeding, the tests showed that the yield of roots is not materially reduced in the first 2 weeks after frost. Starch production may possibly increase during this period. After 2 weeks, there is a progressive decrease in starch content the longer the harvest is delayed, and keeping qualities deteriorate. After 5 or 6 weeks, rotting increases rapidly.

Longer harvest seasons would relieve growers of the burden of large quantities of a perishable commodity and provide manufacturers with supplies of raw materials for longer periods without resort to expensive storage.

The tests also showed that it is better to leave the vines undisturbed after frost. Cutting them has no apparent value. Covering the hills with vines or soil gives no appreciable protection.

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Unheated shed storage of the industrial type sweetpotatoes for 2 months is usually practicable only for roots harvested within 2 weeks after the frost, and only in the warmer parts of the country. The sweetpotato will not tolerate freezing.

As a general practice table varieties should not be stored in unheated sheds except in an emergency, and then only for brief periods with favorable temperatures.

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In 31We

WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

In Colorado, Wyoming, Nebraska, North and South Dakota, Utah, Idaho and Montana

NEW POTATO HAS MULTIPLE DISEASE RESISTANCE

Yampa, a new disease-resistant potato developed and introduced cooperatively by the U. S. Department of Agriculture and the Colorado Experiment Station, is the result of 7 years of breeding, selection, and testing. A medium-early white potato, Yampa is showing resistance to scab, leaf roll, mild mosaic, and early blight as well as some tuber resistance to late blight in the High Plains area.

Well adapted to light, sandy soils, the new potato shows a tendency to crack when spaced too far in the rows in heavy soils. This, however, can be corrected by proper spacing and handling of irrigation water.

Yields up to 879 bushels per acre were obtained from Yampa in Colorado. Under dry-land cultivation it has consistently outyielded Bliss Triumph and Irish Cobbler.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO
EXTENSION EDITORS

United States Department of Agriculture

In Florida, Georgia, North Carolina, South Carolina, Alabama, Tennessee and Virginia

CONGO, A NEW SHIPPING WATERMELON

Introduction of Congo, a high quality, anthracnose-resistant, good shipping watermelon, is announced by the U. S. Vegetable Breeding Laboratory at Charleston, S. C. Several thousand pounds of seed will be available from commercial firms for the 1950 season.

Extensive field and shipping tests indicate immediate popularity of Congo as a dependable commercial variety in Florida, Georgia, and South Carolina.

The name, Congo, symbolizes the melon's background. The resistance to anthracnose was obtained from a melon supplied by the Rev. Rush F. Wagner, of the Old Umtali Mission, South Africa. This was crossed with Iowa Belle at the Iowa Experiment Station. Later a selection from this cross went to the Florida Agricultural Substation at Leesburg, where it was inbred for several generations. The inbred line was sent to the Laboratory at Charleston in 1941. There it was crossed with the Garrison variety. The Congo variety was produced in several generations of selection from this cross.

Congo resembles the Garrison (Coker) variety generally in shape, size, and quality, but it is of a distinctively darker green color. A tough rind and firm flesh that reduce breakage make it a good shipping melon.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO
EXTENSION EDITORS

United States Department of Agriculture

In Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, Louisiana, Arkansas, Oklahoma, Missouri and Texas

To get an alfalfa seeding off to a good start on land of low fertility, apply superphosphate liberally at the plow sole of a deep plowing, the U. S. Department of Agriculture advises. This is on the basis of recent field results in South Carolina reported by Mack Drake and Ernest H. Stewart. The experimenters used 180 pounds of phosphoric acid - or about half a ton of superphosphate - plowed under to a depth of 8 inches.

With soil sweetened with a suitable supply of lime, the tests showed a further profitable increase in yield by applying 200 pounds of potash equivalent and up to 180 pounds more of phosphoric acid drilled into the seedbed at 3-inch depth.

Maintaining high-yielding alfalfa calls for a high initial level of phosphorus, and a continuous supply of potash to make up for the heavy drain this crop puts on this element. Topdressing with potash after one or more of the cuttings of alfalfa is advisable.

Alfalfa plots planted in the fall of 1946 were cut 7 times in the 1947 and 1948 seasons. The increase in yield of these 7 cuttings was more than 2½ tons as the result of the heaviest fertilization.

In at least three ways the 8-inch-deep placement of superphosphate benefits the crop more than mixing an equivalent supply in the plowed layer of soil:

1. The alfalfa puts out more and deeper roots to tap the deep-placed fertilizer.

2. Deeper rooting gives the plant a chance to take water from the moister subsoil, and insures a greater total supply.

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3. The deeper soil is cooler than the surface soil, and the nitrogen-gathering bacteria on the deeper roots keep supplying nitrogen when those on roots in the hotter surface soil slow down or stop in summer heat.

These results apply particularly in the Southeast, where many of the soils need added phosphorus and potassium to grow good alfalfa, the experimenters say. But application of superphosphate in liberal supply is believed to be desirable for alfalfa wherever phosphorus is needed to increase yields. Boron is recommended for alfalfa on most soils, and if potassium is in short supply, it should also be included in alfalfa fertilizer to get the best results from superphosphate.

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WEEKLY NEWS SERVICE
EXCLUSIVE TO EXTENSION EDITORS
United States Department of Agriculture

In all States

HOME-RENDERED LARD KEEPS BETTER IF VEGETABLE SHORTENING IS ADDED

(For Release November 3, 1949)

Mixing home-rendered lard with vegetable shortening will make the lard keep fresh and sweet twice as long, say chemists of the U. S. Department of Agriculture. They report that farmers who used this simple, effective means of preserving lard during the last two seasons found it highly satisfactory. With hog-butchering time just around the corner, the scientists are recommending the method again to all farmers interested in putting up lard.

Only 2 or 3 pounds of the usual hydrogenated vegetable shortening are needed for each 50 pounds of lard. The Department's research men advise adding the shortening to the rendered lard in the kettle, just before settling and separating the cracklings. Another method is to mix the shortening with melted lard in the storage containers. In this case the shortening should be stirred carefully until entirely melted and mixed thoroughly with the lard.

The chemists emphasize the fact that hydrogenated (hardened) vegetable shortening should be used. It is sold under various trade names and any good brand will do the job. The abundance of natural antioxidants in hydrogenated vegetable oil makes it effective in keeping lard from turning rancid.

This procedure was first worked out 2 years ago at the Bureau of Agricultural and Industrial Chemistry's Eastern Regional Research Laboratory in Philadelphia. Quite a number of farmers are using it, Laboratory scientists say. They believe, however, that much home-rendered lard, not prepared for storage in this way, still turns rancid and becomes unfit for food use every

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year. This loss of good lard might be avoided if more farmers knew about and used the Laboratory's method.

Lard is a high-energy food, almost completely digestible, the researchers point out. It contains substances necessary for good nutrition. But strong or rancid lard is unsuitable as food--it is not only unpalatable, but also certain of its desirable food values have been destroyed. Moreover, rancid lard destroys essential vitamins in foods to which it is added. Lard cannot be renovated easily after it becomes rancid. Although some treatments, such as cooking a few raw potatoes in the lard, may make it taste better temporarily, they do not restore its lost food value.

The Eastern Laboratory's scientists advise storing home-rendered lard in tinned containers, which should be free of rust. Since contact with air causes lard to spoil, containers should be filled to the top and tightly closed. After filling, the cans or pails of lard should be stored in a cool, dry place.

For further information on how to improve the keeping quality of home-rendered lard, write to the Eastern Regional Research Laboratory, U. S. Department of Agriculture, Chestnut Hill Station, Philadelphia 18, Pa.

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WEEKLY NEWS SERVICE

EXCLUSIVE TO EXTENSION EDITORS

United States Department of Agriculture

BIG CORN CROP AID TO DAIRY FARMERS

The large corn crop in prospect this year, and the unusually heavy carryover from the record-breaking 1948 crop will make it possible for dairy farmers to feed corn at heavier rates than usual, according to the U. S. Department of Agriculture.

The Department's Bureau of Dairy industry points out that corn is an excellent feed for high milk production when fed in combination with good roughage or other feeds that make up for its deficiencies, especially protein. Good-quality roughage, such as alfalfa and other legume hays or silages, will furnish much of the protein needed with corn.

Corn is palatable and it also has a high total digestible nutrient content--higher than most of the common grains and byproduct feeds. One incentive for heavier corn feeding now is its somewhat lower price as compared with a year ago. At present feed prices, corn furnishes total digestible nutrients at a lower cost per pound than most of the other farm grains. Under these conditions, many dairymen will find it profitable to increase the proportionate amount of corn in the grain mixture.

Experiments by the Bureau of Dairy Industry show that corn may even be used to replace the entire concentrate mixture with good results, if the roughage is good enough to furnish the necessary protein. In these experiments one group of cows was fed corn as the only concentrate, and a similar group was fed a concentrate mixture made up of 1,200 pounds of ground corn, 900 pounds of crushed oats, 600 pounds of bran, 300 pounds of linseed meal, 100 pounds of cottonseed meal, and 200 pounds of soybean meal.

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This concentrate mixture, which was about one-third corn, contained 13.6 percent of digestible protein and 76 percent total digestible nutrients. The corn alone contained 6.6 percent protein and 80 percent total digestible nutrients.

During the lactation period all cows on test were fed concentrates at the rate of 1 pound to 6 pounds of milk produced daily. Both groups were fed all the good-quality alfalfa hay and alfalfa silage they would eat, and this ration more than supplied the required protein with corn alone.

The corn-fed group produced 94 percent as much milk as the mixed-grain group.

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WEEKLY NEWS SERVICE
EXCLUSIVE TO EXTENSION EDITORS
United States Department of Agriculture

In All States

AS EGGS ARE MARKETED - QUALITY DROPS

Only two-thirds of the eggs that producers in 13 Midwestern States deliver to country buyers are of A quality. This was indicated in a recent survey of egg deterioration during the first two stages of marketing by the U. S. Department of Agriculture and experiment stations of the 13 States (Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin). The work was done under the Research and Marketing Act of 1946.

When the eggs reached the carlot assembler, about 2 days later, less than three-fifth of them were of A quality.

On arrival at the country buying station, the study showed that 65 percent of eggs delivered were A quality in the spring, 64 percent in the summer, and 71 percent in the fall.

The best ways to reduce interior quality deterioration on the journey from the country buyer to the carlot assembler, the study indicated, were to see that quality is high when the journey begins, get the eggs to market as rapidly as possible, and keep case temperatures low.

Eggs that sold on a graded basis averaged about 70 percent of A quality. Those selling ungraded averaged about 60 percent. Graded eggs contained considerably less than half as many stains and dirties as ungraded eggs.

Of the egg samples examined, 55 percent were sold on a graded basis in spring, 59 percent in summer, and 73 percent in fall. In all three seasons, eggs sold by producers on a graded basis contained more A-quality eggs than those sold ungraded. For all three seasons, the average of stained and dirty eggs in the ungraded lots was 17 percent; in graded lots, 7 percent.

The brief publication about the study, entitled "Deterioration of Egg Quality During Marketing," is available at the Information Branch, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

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U. S. DEPARTMENT OF AGRICULTURE